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## *Yriarte's "Florence."**

FLORENTINE architecture presents a singular blending of different elements and of different kinds of interest. Most of the principal architectural monuments of Florence seem to form more or less examples of the fusion, or of the employment simultaneously, of elements belonging to both Classic and Gothic architecture. But this dual character is exhibited in the city at large, to some extent, as well as in individual buildings. If we compare the Palazzo Vecchio and the Campanile, for example, which are two of the most typical, as well as most important, structures in the city, they seem like architecture from two different quarters of the earth. No one on the mere inspection of drawings of the two buildings, would imagine that they were separated only by somewhere about 300 yards in space, and by about thirty years or so in time. Indeed, there is even a very close artistic connexion with them, since the Palazzo is attributed to Arnolfo di Lapo, the architect of the Duomo, which latter gave at least the key for the style of the Campanile. The two buildings are a kind of contradiction to the position maintained by so many of the Gothic revival architects in this country, that there could not be one style of architecture for one thing and another style for another thing; a Gothic which should be a church style, and not a domestic style. The architect of the Palazzo and the Duomo, at any rate, had two distinct styles, and worked both of them with a considerable measure of success, though the designer of the Campanile cut him out in the more ornate cathedral style, and threw the cathedral into the shade. But the Palazzo Vecchio is a grim memorial of the state of turmoil from which the Florence of the Medici and of the great Florentine period of art emerged. It is a building, externally at least, for grim use, for defence and retreat; its lower story is nearly solid, pierced only with small grated windows; its upper story overhangs portentously over huge machicolations, and even sterner effect is produced by the tower rising from the line of the machicolated story, and overhanging the lower part of the building. Hardly any building could be named which is more historically significant than the Palazzo Vecchio. Standing in the midst of the city which is the Athens of the modern epoch of the world, and which is full of artistic beauties of every kind, and was the headquarters of the refined and cultured dilettantism of the Renaissance, this stern pile of building seems like an ominous record of the fiercer times which preceded the development of Florentine art. The internal architecture of the palace has much refinement and beauty, such as might well go with the same age which created the Duomo and its Campanile; but externally it is a building emphatically denying all sympathy with culture or with the train of associations for ever interwoven with the name of Florence.

The contrast between this stone fortress and the architecture of the Campanile is the most marked that there could be. The fortress represents that quality of Gothic architecture which has been regarded by some Gothic revivalists as representing the essential characteristics of Gothic architecture,—that which almost ignores all decoration except such as arises out of the construction. It has much of that character which Ruskin has happily designated "wolfish," and which some architects, following in the steps of his teaching, have endeavoured to realise in the erection of buildings for modern purposes with the aspect of feudal castles. The Campanile is the frank reverse of all this. It must be classed as Gothic, but it wants nearly all the elements most essentially characteristic of true Gothic architecture. There are no massive buttresses, no bold display of construction; the one feature that is in unison with true Gothic feeling in it is the bold machicolation of the cornice,—bold in scale and proportion, though treated with very delicate ornament in detail. For the rest, the Campanile is almost like goldsmiths' Gothic, as one might say. It wants one of the most necessary elements in architectural design which nearly all Italian towers want, that spreading at the base which is so essential to give the appearance of monumental stability. It is, moreover, entirely an architectural facing, not a real piece of building; a recollection which must always be an annoyance in our contemplation of it. But yet there is no question that the Campanile fascinates, and has fascinated, all who have looked at it. Even those who condemn it on stern grounds of architectural truthfulness do so lovingly, and as if they could not escape the charm of it. And the secret of this is, that in spite of the objection we naturally feel to a merely veneered architecture, there is in the Campanile the display of a highly-refined artistic taste and organisation. It is not in a perfectly pure and homogeneous style, it does not represent the best and most solid manner of building; but it is a design in which every portion is accurately balanced and proportioned to the whole, and in which we see the application of classical refinement and finish applied to what in the main are Gothic details. The lesson of the Campanile in this respect is a very important one. It shows that, in spite of the inherent architectural weaknesses of style and construction which it exhibits, this carefully-considered refinement and proportion of parts will have a lasting effect in compelling admiration for the total result,—that the aim after the forcibly picturesque, in an unsystematically designed building, may be often a delusion, leading the designer away from the qualities in architecture which will most strongly assert their pre-eminence in the long run. In short, the Campanile is a *design*, not a mere *pile*; and architecture, as pursued by men of cultivated tastes, should have that quality. Among recent modern Gothic architects in this country there is a taste for piling, and it is singular that those who will express high admiration for the refined and studied design of the Florence Campanile will themselves illustrate a totally opposite theory in their own buildings by putting up towers and other masses of building in a way that suggests no study except how to avoid the appearance of study. Such buildings will please as long as the forced taste for irregular piling lasts; but when it passes off, as every forced taste of the kind is sure to do sooner or later, there will be little left to command the admiration of future generations. The defects of the Campanile design, in addition to that inherent defect of want of solid construction, are that the tracery is rather clumsily treated in detail (but this is only apparent on a very close examination), that the twisted columns springing from projecting brackets are not truly architectural in their relation to the whole, and look rather too much as if affixed for the purpose of ornament, and that the tower has never received its completion. Of this latter fact few of those who admire it are aware; though we have found a rather general consensus of opinion among amateurs that it "looks unfinished." Considering how almost universal is the completion of the straight-lined Italian Campanile with a lantern and spirelet, it is astonishing how blind even architects seem to be to this incomplete state of the Campanile, even supposing that they are unacquainted with its history. M. Yriarte alludes to the fact, mentioning that Giotto had intended to terminate the square by a pyramid, as in the Campanile of St. Mark, at Venice, but that his successor Taddeo Gaddi had suppressed that addition. It may be observed that there is a certain doubtfulness as to the actual authorship of the design, some of the most learned Italian students of architectural or of Florentine history regarding Giotto's connexion with it as a myth; but they none of them express any doubt as to the fact that it was not intended to have its present abrupt termination. In fact, the carrying over of heavy machicolation with nothing further is a device proper rather to military towers than to such a piece of purely decorative architecture as this. It

* Florence. L'Histoire—Les Médicis—Les Humanistes—Les Lettres—Les Arts. Orné de 500 Gravures et Planches. Deuxième Edition. Par Charles Yriarte. Paris: J. Rothschild, 13, Rue des Saints-Pères. 1881.—See p. 475, *ante*.

may be doubted, however, whether a heavy pyramidal roof like that at Venice would not rather overweight the delicate design of the substructure, so different from the nearly solid mass of the Venetian tower.

The Duomo itself does not stand nearly so well, as an architectural design, as the Campanile. In the portion of the church which was designed by Arnolfo di Lapo, previously to the Campanile, the faults of the style, its flatness and constructive weakness of effect, are much more apparent, both proportionately to the mass and absolutely; for the Campanile shows considerably more relief of surface than the immense mass of the cathedral walls. The Campanile is the work of a man of superior genius (whether it were Giotto or not), improving upon the details of the church. The illustration we give from the exterior of the church * is one given by our author more for sculptural than for architectural reasons, to illustrate the sculpture in the tympanum, "La Madonna della Cintola," which M. Yriarte ascribes to the hand of Jacopo della Quercia; resting, as far as we gather, entirely on the evidence of the style of the work itself, in the absence, as he says, of any document affirming other authorship. It has been traditionally assigned to Nanni di Banco. We may be allowed to feel sceptical as to conclusions based in such a case on merely internal evidence, and it would hardly be worth while either to concede or to contest the point. The illustration serves, however, to draw attention to some of the points in the architectural detail; the rich treatment of the archivolt of the doorway, which in its succession of well-marked and bold mouldings is in curious contrast with the exceedingly flat and even tame treatment of other portions of the detail; the very Classic character of most of the foliage decoration, especially the running scroll-work in one of the broader members of the archivolt, so different from anything that is found in Gothic buildings anywhere but in Italy; and the bad and rather trumpery taste of some of the inlaid ornaments, especially the absurd ornament of the wide band running round the sculpture panel in the tympanum: this, fortunately, is too subordinate to injure the total effect, but it is an example of the lapses of taste which are found in the detail of the Duomo, and in a lesser degree in some of that of the Campanile. For the dome, M. Yriarte expresses a greater degree of admiration than we are able to allow. He says of it, "*Elle dépasse en audace et en harmonie tous les monuments de l'art moderne.*" The great claim of Brunelleschi to admiration is in his thoroughly workmanlike way of building; he alone of those who wished to construct it knew what he was about; it is an eminently well-built dome, and has additional interest in the fact that it is an almost solitary instance of the application of the dome on a large scale to what may, on the whole, be regarded as a Gothic building. But as a piece of design it cannot be so highly praised; the base of the dome is weakly treated, and the lantern is a poor design in itself, and is clumsily joined on to the apex of the dome. The shade of Brunelleschi must rest content with engineering rather than architectural honours.

In commenting on San Miniato, M. Yriarte observes that the constant use of an inlay of coloured marbles, so prevalent in Florence, arose naturally out of the usual tendency of the builders of whatever neighbourhood to make use of the materials readily available in that neighbourhood. The environs of Florence were rich in coloured marbles of different kinds, and hence the temptation, when prosperous times and days of high culture set in, to make use of such materials largely in order to produce a rich and sumptuous effect. It would perhaps be unreasonable to complain of an exaggerated use of a special material when it has resulted in the creation of almost a special class of architectural design peculiar to the Florentine district; otherwise we might say that the Florentine architects would have produced a more monumental and more strictly architectural effect if they had restricted their use of these marble inlays to the less constructively important portions of their buildings, marking the construction by plainer and more massive materials. The front of San Miniato is, of course, entirely altered from its original form by this addition of incrustations in a later day; the old basilica, in fact, underwent successive changes in the course of generations as one artist after another brought his contribution to it. As M. Yriarte says, happily this was in the great age of Florentine art, and the basilica could hardly but benefit by any additions made to it in such an age; but it may be questioned for all that whether the variegated panelling of the façade does not rather clash with the simple outlines of the old building. In Santa Croce, another of the works of Arnolfo di Lapo, and in style a simpler edition of the style of the Duomo, the treatment of the front is remarkably satisfactory and harmonious, but there is all the difference between a building designed from the first in this style, and a building of an older date and simpler style, to which the polychromatic decoration has been added. Byron has familiarised every reader with a portion of the peculiar claims to interest possessed by this church,—

> "In Santa Croce's holy precincts lie
> Ashes which make it holier";

those namely of Michelangelo, Galileo, Machiavelli, and Alfieri; the tomb of the latter was the work of Canova. When Byron wrote, Dante had no monument in "ungrateful Florence," a fact which inspired the poet with two of the best stanzas of "Childe Harold," but his monument is now among those of Santa Croce, by the sculptor Étienne Ricci. M. Yriarte remarks in a melancholy tone on the inferiority of these two modern monuments to the older ones. "Comparing them to the monuments of the fifteenth century and those of the Renaissance, of which Florence possesses such prodigious examples, these tombs are of an inferiority so marked that '*on fait un retour sur soi-même*,' in asking how it is that the source of genius can have been thus drained so as to dry up so green and verdant a tree as that which had flourished in the Tuscan soil. It is not only at Florence that one experiences this feeling; at Venice already, in the marvellous church of Santa Maria Gloriosa dei Frari, when we see, by the side of the tombs of the Doges and Condottieri of the fifteenth century, the miserable monument on which the great name of Titian is inscribed on a singular pyramid of marble, we cannot refrain from some sad reflections. There is evidently a fatal law to which humanity has to submit; genius is born, grows, develops itself, and covers the whole earth with its shadow; then, little by little, the sap recedes from the growing trunk; the tree produces fruits less savoury, flowers less beautiful, the branches finally wither and the tree is dead." A remark which falls in curiously with one at the close of a paper on art, printed in our last number. M. Yriarte might have added that it is useless to devise mechanical means for propping up the tree when it is dead.

Another phase of Florentine architecture is illustrated in what is in some respects one of the most remarkable bits of architecture in the city, the Loggia dei Lanzi, the design of which is ascribed to Orgagna. The peculiar interest of this arcaded space (apart from the works of art which are placed under its shelter), lies in its singular combination of Gothic and Classic feeling. The grouping of the pilasters which combine to form each pier is a feature essentially Gothic; the treatment of the arches in receding faces is also Gothic, but the arches are circular, and the general effect of the arcade is certainly Classic rather than Gothic. It combines in a rare degree lightness and grace with sufficient massiveness. Then the cornice terminates in an open balustrade distinctly and completely Gothic in character, and carried on trefoil Gothic arches, but these trefoil arches spring from a row of Classic cantilevers. The combination is one of the most peculiar in architecture, the more so from the double form in which it occurs; in the lower portion a fusion of Gothic and Classic elements is seen, Classic forms being used in a Gothic manner; in the upper portion pure Classic and pure Gothic details are used in juxtaposition. This finish certainly clashes with the lower portion, and looks as if designed by a different hand.

We remarked on the extraordinary contrast between the style of the Palazzo Vecchio and that of the Campanile, and the reminiscence of the turbulent times of Florence which survived in the stern walls of the former. But this contrast in Florentine architecture reappears when we come to the rise, in the Renaissance period, of that style of palatial architecture which is so marked an element in Florence, and which has exercised so strong an influence on modern architecture of the same class in other countries. If we take such a building as the Riccardi Palace, we find here an architectural style quite different in expression from the stern and grim style of the Old Palace, but also as completely opposed as possible to the delicate but superficially constructed architecture of which the Campanile is the finest type. Here there is no veneering, but the most solid and massive construction; very little ornament, the effect being chiefly produced by the disposition and the simple decorative treatment of the windows, by the use of a stronger rustication in the lower story of the masonry, and by a powerfully proportioned horizontal cornice which dominates the whole. In this particular example, the Riccardi, there does seem to be a certain degree of the same influence which gave expression to the architecture of the Old Palace; for the basement story of the Riccardi retains some of that fortress-like aspect which naturally arises in habitations built in turbulent times. The lower story seems adapted for defence, the upper stories for habitation. This distinctive treatment of the lower story becomes less marked in others of these Florentine palaces; in the Rucellai and Guadagni palaces the plain and massive treatment of the lower story is retained, with small and insignificant windows, but with a much less fortress-like aspect than in the Riccardi; in the Pitti Palace this distinction of the lower story is not observed at all, and the general character is the same throughout. The larger of these palatial structures are notable examples of the effect that may be produced in architecture by exceedingly simple and broadly treated masses of building, well proportioned, and, to a certain extent, varied in their different stories, and built in the most massive and monumental manner. It is in this latter fact that great part of their effect resides. There is nothing little or scamped about them; they are built as if to last for centuries. In this respect they afford as marked a lesson in one way as the Campanile affords in another way. The latter shows what can be done by great delicacy and profusion of detail, carried out with great finish and refinement. The palaces are examples of the effect to be obtained by solid, massive, honest building, reticent in regard to decoration, and designed in a manner perfectly dignified and unpretentious, and precisely in accordance with the object for which they were built, to provide city dwelling-houses on a grand scale.

We cannot, however, pursue the subject further in detail. In reference to the second of the two illustrations we are enabled to give this week,* we may observe that it also, like the other, is taken from the portion of M. Yriarte's book which is devoted to Florentine sculpture, representing, as it does, a feature which is decorated with one of the best and most characteristic designs of Donatello, the sculptured groups of children in the panels. These groups are given in an enlarged form on another page of the book. The interest of the illustration showing the whole design is, however, rather architectural than sculptural, as it is an exceedingly good example of a class of objects common in Italian churches. This particular example is included in M. Yriarte's work as among specimens of sculpture by Florentine artists; it is not in Florence, but is built out of the south-west angle of the cathedral of the small town of Prato, about eleven miles from Florence. It was built for the periodical exhibition of a celebrated relic, the sacred girdle of the Virgin, and hence it was considered a worthy object for the exercise of the great Florentine sculptor's genius in supplying the carved panels. On the picturesque design of the pulpit as a whole it is unnecessary to dilate. We may observe that here again is the admixture of Gothic with Classic feeling so peculiarly characteristic of Florence and its neighbourhood; the thick angle column carrying the umbrella-like canopy is decidedly a Gothic feature; but the lower portion is decorated with miniature pilasters, and carried by Classic cantilevers.

In addition to the numerous engravings of buildings, pictures, statues, and portraits, the book is farther beautified by the reproduction, in fac-simile, of a number of Florentine book ornaments, which surround the titles of the various chapters, and are exceedingly characteristic and beautiful specimens of Florentine taste in these minor forms of adornment. The illustrative department of the book is throughout excellent, and carried out on a most liberal scale, the whole making a beautiful and sump-

* See p. 518, *ante*.

* See p. 519.

tuous volume on one of the greatest and most fascinating periods of artistic history, and such as will be a valuable, and indeed almost essential, addition to every good library.*

## EFFECTS OF LIGHT ON STAINED WINDOWS AND ON SCULPTURE.

Sir,—Happening to be in London on the 8th inst., when, as you may remember, an extraordinary darkness occurred in the morning, which spread over many miles of country, and which in some places,—the neighbourhood of Sydenham, for instance,—required the lamps to be lighted, one or two effects of light occurred to my observation, which, perhaps, you may think worthy of putting on record.

The first of these was at Westminster Abbey. Finding, in spite of a thirty miles' run to town, that I was too early for a person I wished to see at Westminster, I economised the time by a visit to the Abbey. The morning service was going on, the candles in the choir being lighted, as at evensong in winter. When a glorious burst of music from the organ had signalised the close of the service, and the departure of the clergy from the choir, I walked round the familiar and venerated aisles. But I was in a new region, or rather was transported back in time by five or six centuries. It was not at first apparent to what this effect was due,—and you will allow that the explanation is not only interesting, but comforting. I am not sure how far you agree with those *laudatores temporis acti*, who have been heard to express a wish to fill their pockets with pebbles, and discharge the contents at the rose-windows of the transept. I confess to having entertained a wish so to do myself. But no such wish crossed the mind on that gloomy day. The effect of the low atmospheric illumination on the windows was like that effected by age. So much less light than usual was transmitted, that what actually reached the eye had that "dim religious" tone in which many of us think that these windows are deficient. The north transept window, especially, looked like rich antique glass, and the small lights below it looked like the very earliest window jewelry. The memorial windows to our three great engineers,—Stephenson, Brunel, and Lock,—were remarkably rich in their effect, casting a sort of glow-worm lustre, so that they appeared rather as something visible by their own light than as sources of evident illumination for the interior. The effect of the whole was wonderfully fine. Not only so, it leads to the hope that when the London atmosphere shall have anticipated the chemical action of centuries in roughening and dirtying the external surface of the glass, the windows of the Abbey will have lost any approach to what may be called either tawdriness or glare, and the glass-workers of 1880 will be promoted to a higher place among the fathers of the art than criticism has yet accorded to them.

The other experience was at South Kensington. How far it may be due to the darkness of the day, and how far to the vertical lighting of the lofty hall to which "David" and other large pieces of sculpture have been removed from the north court, I cannot say; but I confess that I was startled by a legacy of recently departed genius. You know, sir, that if I have a passion for anything, it is for noble sculpture; that I have sculptor's blood in my veins, and that the chisel is not unfamiliar to my hand. And my study and criticisms of the art have not led me to put John of Bologna or Benvenuto Cellini on the same level as Pyrgoteles, or Polycletus as high in the scale as Phidias. But when in that light, not very bright, but skilfully cast down, I looked on two groups by Alfred Stevens which I had *not* altogether admired at St. Paul's, a kind of awe came upon me. "The mantle of the Florentine," I said half aloud, "has been cast on the shoulders of Stevens." There is a little of the rich delicate grace of John of Bologna, there is a trace of the elaborate elegance of the "Eloquence" of the Argyle monument; but there is the breath of Michelangelo in these groups. They were two,—casts of the original models,—for the tomb of the Duke of Wellington: "Courage and Cowardice," and "Truth and Falsehood." I had never quite understood how it was that I had not admired them more in St. Paul's. The modelling is undeniably fine, the design masterly, the action energetic, but not overstrained. I had also, I think in your pages, made complaint of the villainous lighting of the whole composition, as crammed into a sort of cell in which there was no room for the artist to turn himself round. But I had not before put two and two together, nor duly realised how the noble genius of Stevens had been stifled and smothered,—at least as to the effect produced by its children,—by the usual foe and victor of the sculptor, bad illumination. I went a step further. I thought, what will the editor of the *Builder* say if I express the opinion that these figures of Stevens, if lighted in the same way, need not blush to find themselves side by side with the creations of Michelangelo? And lo! as I pondered, stood before me the awful forms that watch over the Medicean tombs. In the corner of the large hall were two packing-cases, the front or lid of each of which had been removed, and the figures within,—casts of the two chief figures on the tombs,—with a back-ground of straw and packing, received a light even more restricted in its direct incidence than that which fell on the groups of the English sculptor. The shadowy awe, of which Byron has so well spoken, that broods beneath the helmet of the pensive seated figure, seemed as if spirit dwelt within the form. It was impossible for these two masterpieces of Michelangelo to be seen under a more impressive and well-adapted light than that which thus casually fell upon them. I gazed at them with reverence. But I did not retract my opinion as to the kinship of the genius of Alfred Stevens.

Let me ask you, and ask all those who love art for the sake of art, and who seek to master her hidden secrets, not for the sake of criticism, but for that of instruction, to give more careful heed to this question of illumination. The sculptor is a fellow-worker with the sun. Take away the light, and where is the form? Concentrate the light in as small a pencil as possible; direct it from above, and treat it by shadowy projections,—the wings of Medusa, the cap of Hermes, the helmet of Mars,—and you have a closer approach to life than painting can render. Ay, and to an imaginative, spiritual life, nobler than that of the busy world around. Put the same figure in an open square, or in a room with ordinary windows, and you have—a piece of stone-cutting. Who cares to look at the Shakspeare of Roubiliac, executed for Mrs. Garrick, and for which Garrick himself stood as a model, in the corner of the British Museum in which it is stowed away? Some little time ago I was at Oxford, where I was shown, I think in the ante-chapel of New College, a beautiful relief in memory, if I am not deceived, of Sir W. Jones. But the relief was so lighted as to look poor, thin, and mean. It was between two cross-lights, and placed without any reference to the proper illumination of the sculpture. I said to the authority who showed me the place, "I think that is a fine piece of work; but I am sure you have never seen it." Whether I was thought a little mad or no I cannot say; but I was allowed to open a door so as to cut off one set of rays of light, and have the relief illuminated from a single direction alone. "Now," I said, "did you ever see it before?" "No, sir, I certainly never did," said the verger. It had been seen before as lighted by the mason. It was then seen as it had been lighted by the sculptor.

I must ever regret missing the opportunity of seeing the Wellington figures in the studio of Stevens. You, sir, no doubt did see them, and you can, perhaps, say how they were illuminated there. I do not say that it is impossible to illuminate sculpture better than with what I may call its native light. Torch-light, for instance, makes some sculpture look far finer than day-light. If I had time for the work of the studio, I should try the effect of a figure wrought and to be seen only by torch-light. The story of the candle, that Michelangelo fixed in his cap, serves to hint at something of the same kind. I hold that it is absolutely certain that to produce anything in sculpture that deserves the name of the grand, the light might be restricted to a certain incidence during the whole time of execution, and the figure must be seen by the same, or by some equally restricted, light. The difference between a figure at Madame Tussaud's, and the Newton, in Trinity College Chapel, Cambridge, is palpable. But it is quite possible so to illuminate an inferior work of art, even a wax mask, and so to disfigure a noble sculpture by a flood of incongruous light, as to confuse the very primer of excellence. "Let there be light" is the fiat of art. "Let there be the true light" is the main secret of the sculptor. C.

* We willingly go a little out of our way to mention that the French publisher has appointed as his agent for England Mr. Charles Davis, 47, Pall-mall.

## A PLEA FOR THE INDIAN PUBLIC WORKS DEPARTMENT.

The members of the Indian Public Works Department are now so widely spread that a few notes on two papers referring to them, recently made public, will, doubtless, be of interest to many of our subscribers. The first is an elaborate and carefully thought-out minute by Sir Andrew Clarke, R.E., K.C.M.G., late Minister for Public Works in India, and previously well known in this country in connexion with the Portsmouth Dockyard and other works, and from his being on the council of the Institution of Civil Engineers. He reviews the past history of the Department, and though he knows the discontent to have been long standing, and appears to consider the members of the Department to have good grounds for their dissatisfaction, he states he has observed "no disloyalty to Government" on their part in pressing their claims on his attention. He reviews the difference between their pay and pension rules and those of the Civil Service and the military officers employed, and instances one or two in which the present rules press very heavily on the civil officers, and, in fact, says, "the whole tenor of this section of the pension code shows that it was never intended to be applied to an establishment like that of the civil engineers of the P.W.D." It was a necessity of a service now quite obsolete, and when framed no one considered that it would be eventually applied to the class it now includes.

Sir A. Clarke points out the present prospects of the Department, and the work it will be called upon to perform, and concludes that at least 100 engineers would have to be retired on suitable pensions, which should be a special grant to meet the unprecedented case. He suggests that those retired should go voluntarily, especially so as regards the class known as "Stanley Engineers," as they could not be retired, compulsorily, but that to all cases the permanent benefit to the Department as regards efficiency should be considered rather than "the desire to save in one item of the civil estimates." It appears from one of his statements that, whereas the Royal Engineers, with between twenty and thirty-two years' service, can get pensions ranging from between 166*l.* and 416*l.* per annum, which they can claim voluntarily, and have in addition the prospective benefits of a possible 1,125*l.* per annum, after thirty-eight years' service, the civilian can only get between 166*l.* to 416*l.* in the same time, and then only on the production of a medical certificate stating his incapacity to serve any longer, should his service be under thirty years.

Since the minute was written, and since he left India, over 300 engineers have been dismissed the service, the retirement of fully four-fifths of this number being anything but voluntary, whereas all that has been done with the Royal Engineers branch of the Department is to allow two years' holiday on furlough pay to those who wished it, a boon which, had it been offered to the civil branch, would have been eagerly accepted by many.

Sir Andrew Clarke concludes his minute with a reference to the Roorkee and Cooper's Hill Colleges, and to the Stanley Engineers, the latter of whom, he says "stand first in the order of utility," whereas of the Cooper's Hill men he states that for some time after joining they "are very little use indeed." Why is this?

The second document referred to is "A Return made to the House of Lords on the motion of Lord Belper, of annual expenditure and receipts of Cooper's Hill College, &c., dated 25th July, 1881." From this it appears that out of 450 students in ten years, 299 have gone to the Public Works Department, and that the cost of their education, &c., has been in round numbers 198,000*l.*, to which a sum of 47,000*l.* odd must be added on account of ten years' simple interest at 4 per cent. on 119,076*l.*, the original cost of Cooper's Hill College Buildings, making a total of 245,000*l.* The college has received fees, &c., to the amount of 149,000*l.* odd. The ultimate burden on the Indian estimates being for ten years 96,000*l.* odd, or at the rate of a little over 320*l.* per assistant. These figures appear large

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and it is questionable if the result is commensurate with the expenditure. Sir Andrew Clarke in the minute above referred to states that he could not find that the opinion of the Government of India was ever asked for in the matter, and the time now appears to have arrived when it should be decided if the already modified College system should or should not be continued.

Some of the suggestions made by him have been carried out; for instance, the Military Works Department is now officered entirely from the Royal Engineers, but nothing whatever has been done to fill the Civil branches entirely with civilians, or by a proper proportion of civilians to military. We think that in these departments the higher grades should be filled by promotions in proportion to the total number of civil or military engineers respectively.

We also have been led to think that some such rules should be laid down as are said to exist in the Swedish service, where civilians and military men are all paid alike, one consolidated rate, and that as regards retirement and pension rules they should be the same as for all other covenanted civil servants of the Government of India.

Both minute and blue book will repay careful perusal by all who are interested in the matter.

## THE SAFETY OF THE CHURCHES OF EAST ANGLIA.

The Honorary Secretary to the British Archæological Association, referring to the inquiries made, without eliciting reply, by the *Builder* as to the existence or otherwise of a lightning conductor to the church of South Wootton, Norfolk, recently much damaged by lightning, reiterates his former warnings as to the danger to which the churches of East Anglia are exposed by the neglect of this necessary precaution. Norfolk and Suffolk, as Mr. Loftus Brock justly remarks, and as all familiar with those counties are aware, are distinguished for the number, beauty, and lofty and conspicuous sites, of their church towers. "They answer, so to speak, one another from hill to hill, and fulfil in many respects the *beau ideal* of a church in relation to its prominent position in a landscape." The churches inspected in 1879 during the Congress of the British Archæological Association at Great Yarmouth are estimated by Mr. Brock at the money value of 200,000*l.*; which is a mere trifle in comparison to their historic and architectural value.

The livings being usually poor, and the country agricultural, the aid that is usually now so freely forthcoming on any appeal in support of the fabric or the service of our churches is more scanty in East Anglia than in richer parts of England. But the occurrence of damage from storm is thus all the more to be deprecated. On the simplest principles of ecclesiastical economy we hold that those concerned for the welfare of the Church will do well to listen to the warning, and not to listen alone, but to give the remonstrance the solid echo of their subscriptions. For ourselves, we put the matter on a higher ground than that of cost. No money can replace a grand old monument. The new churches, we are happy to hear, are so far secured in that respect that the application of a lightning conductor is made a *sine quâ non* for the granting of any aid from the Church Building Societies. But better be damaged half a dozen new churches than one old one. Not that the former mischief is not to be deprecated,—but it is at all events reparable. The other may be irreparable. In our review, some time back (vol. xxxviii., p. 29), of Mr. Richard Anderson's excellent work on lightning conductors, we cited the long list, which occupies eleven pages of royal octavo in that book, of the damage done to churches and other public buildings by lightning in the last and in the present centuries. Many of the instances are taken from our own columns. At the same time there can be no doubt that this long list very imperfectly represents the number of lightning strokes that actually occurred. There has been a lull in the destructive activity of the lightning, of late,—due, we think, probably, to meteoric causes, rather than to the effect of protective conductors. If so, we may at any time find we are entering on a cycle of thunderstorms. The escape of any building, or any set of buildings, unprotected by conductors, for a number of years from damage by lightning, affords no pledge for their continued security. Cromer Church, in Norfolk, which had the pinnacle slightly damaged by lightning in August, 1879, is the last case cited by Mr. Anderson. Will the British Archæological Association accept the advice that by calling on their members to supply all the information attainable by each of them as to the injury of public buildings by lightning, in their several localities, and by issuing an enlarged edition of the list commenced by Mr. Anderson, they may do good service to the cause they have at heart, and call the attention of all those who love old English churches to the need of protecting them from the thunderbolt? We shall willingly print any such list.

## BUILDING SOCIETY RETURNS.

In pursuance of an order of the House of Commons of 25th February last, the Registrar has issued an abstract of the accounts furnished by incorporated building societies, which is the sixth return presented since the passing of the Act. It contains the names of all societies, now existing, that were incorporated prior to the 1st of January, 1881. The societies in the list number 1,321, of which 1,163 have made returns. Of the 115 which have not made returns, 94 are either in course of winding up, or have not yet completed a year's financial arrangements, so that only 22 are defaulters. The receipts of the companies are:—

| | No. | Receipts. |
|---|---|---|
| England and Wales | 1,115 | £18,694,555 |
| Scotland | 48 | 635,225 |
| Total | 1,163 | £19,329,780 |

These totals show increased receipts of 2,277,333*l.* for England and Wales, and of 11,012*l.* for Scotland, since the last return. Out of the gross total, nearly 11,700,000*l.* stand to the credit of 63 societies, leaving the balance of 7,600,000*l.* to be shared between the remaining 1,100. There are 35 societies of which the receipts exceed 100,000*l.* each, rising from that sum to 923,277*l.*; 28 societies exceed 50,000*l.*, and are under 100,000*l.* The liabilities are,—

| | |
|---|---|
| Ordinary shares | £21,463,814 |
| Preferential | 1,554,159 |
| Depositors | 14,183,678 |
| Total | £37,201,651 |

The assets are,—

| | |
|---|---|
| Mortgage securities | £36,011,383 |
| Other securities and cash | 2,213,978 |
| Total | £38,215,361 |

It is well that all the security which official inspection can supply should be afforded to these useful associations. The advantage which an association possesses over an individual, in the way of amassing money, is chiefly derived from the facilities possessed by the former of investing their income the moment it comes to hand, so that, in fact, they come very close to the receipt of compound interest, as that extraordinary offspring of civilisation lives and grows upon paper. And the working man who puts his weekly shillings into a sound building society is actually ensuring the benefit of this wonder-working compound interest. Then we must remember the vast difference made by enlisting human nature on the side of economy and prudence. Loose cash wears out the pockets. It is well said to burn holes in them. It is so easy to change it for beer at the public-house, and the worst of the change is, that while the cash preserves its individuality wherever it goes, and does its duty as a medium of exchange whenever it is called on,—the beer does not. It disappears,—no more to reappear. Sometimes in disappearing, like coal that is burned under a boiler, it does good work. As often, we fear,—if not more often,—it does more harm than good. If the magic wand of some great master of fiction were to represent to the English workman how many a cottage could be built, in how short a time, out of the pots of beer which he did *not* drink,—we think it would give an impulse to building societies. Here is a little calculation which we made the other day *apropos* of the plan then proposed, which has since fallen through, in Germany as to a State insurance of the life of the working man. It would be far better for him to insure for himself. The difficulty has been how he could do so. The building society supplies the method. And let it be remembered that what we now say of a penny a day will have to be trebled if we substitute the words pot of beer for the word penny.

A penny a day is 1*l.* 10*s.* 5*d.* a year. Neglecting the odd pence, if an individual were to lay by a penny a day from the age of twenty to that of seventy, allowing the hoard to accumulate in an old stocking, or buried in a hole in the earth, the sum would amount to 75*l.* at the end of the fifty years; and if the depositor died during the time, the deposit would be in exact proportion to the number of days during which the deposit had been carried on.

If a similar accumulation had been allowed to take place with pounds, or larger sums, instead of pence, it is obvious that the depositors might have made a much better use of their savings than to bury them. Invested in houses, in land, or in trade, the capital would have been living instead of dead, and would have earned an annual return. If this return had been at the rate of three per cent., the 75*l.* would have increased to 112*l.*; if it had been at the rate of five per cent., it would have amounted to 209*l.*

## LABOURERS' DWELLINGS IN DUBLIN.

At a recent meeting of the Dublin Corporation, Mr. E. Dwyer Gray, M.P., moved the adoption of the report of the Public Health Committee *in re* the adoption of the Labouring Classes' Lodging-houses and Dwellings Act (Ireland) 1866, 29 and 30 Vic., cap. 44. The Committee reported:—

"1. That the Labouring Classes' Lodging-houses and Dwellings Act, 1866, is applicable to Dublin, and that it is highly desirable that it should be put in operation.

2. That the Oxmantown Estate, and possibly portion of the property which may be purchased by the Corporation for the purpose of the new street to the Swivel Bridge, afford convenient sites and occasions for a commencement.

3. That there are very many vacant spaces in Dublin, especially those reported on in the annual report of Dr. Cameron for 1880, which might be purchased on reasonable terms, and upon which dwellings might be erected with great advantage.

There are many hundreds of houses in Dublin in an utterly unsanitary condition, as your committee have frequently reported, and which your committee would take more stringent steps to close if they did not, as they have also reported, fear that the consequent overcrowding other dwellings might result in greater evils than those now existing."

Mr. Gray said it was now proposed merely to pass a preliminary resolution notifying to the ratepayers that the Corporation intended taking the matter into consideration on a particular day, and he would suggest Monday, the 7th day of November. There was no reason why this undertaking should not be attended with success. They had the example of the Artisans and Labourers' Dwellings Company in Dublin before them, and that undertaking paid four per cent., dividend. He saw no reason why this other undertaking should not also pay close on four per cent., so that by spending 100,000*l.* or 200,000*l.* on it, it would not mean that the interest would be saddled on the ratepayers, but that the undertaking might be made self-supporting. He confessed he was of opinion that the Corporation should not become extensive landlords, and it would be only as a last resort that he would recommend them to engage in any extensive building speculation, because he did not think that the Corporation or any public body could be good landlords, and their experience of their Baldoyle tenants had been that building was not very remunerative. However, the work was one which should not be shelved. In connexion with this undertaking they contemplated providing rooms for single women of the poorer classes at low rates; for he believed that no class required the protection of the public authorities more than these poor, industrious, struggling women. He moved a resolution to the effect that public notice be given of the intention of the Council to take into consideration the propriety of adopting the Labourers Act for Dublin, and that the Council would take it into consideration at a meeting of the Council on Monday, the 7th of November, at one o'clock.

The motion was adopted.

This subject was also discussed in the Health Department of the Dublin meeting of the Social Science Congress, where

The Recorder of Dublin read a paper, in the course of which he stated that the supremacy of the death-rate in Dublin lately compelled the speeding of a Royal Commission, and the very able report of the commissioners, Messrs. Rawlinson, C.E., and MacCabe, of the English and Irish Local Government Boards, unhesitatingly attributed this evil state of things to the condition of the houses of the poor. Previously to this report the Recorder had addressed the Lord Mayor on the supremacy of the city crime rate, attributing

this also to the social condition of the poorer classes within their homes and in the streets outside. The author urged the reparation and reconstruction of the various statutory powers already existing under general Acts, rather than seeking to deal with this ancient and diversified city upon any single or special plan. These statutory powers came under the heads of,—1. Provisions relating to cleaning of entire civic areas; 2. Those relating to the reparation of individual houses; 3. Those relating to the provision, by civic authority, of houses for the working classes. The work of improvement has a tendency to raise rents, and therefore to create a residuum of the very persons who are most difficult to deal with, and yet most need remedial measures. In the work of reparative reform the duties of corporations, owners, occupiers, and magistracy, are correlative and reciprocal, and each without the other vain. The author expresses his conviction that the urban grievances which now call for redress are more urgent than those rural claims which have monopolised public attention.

Dr. Charles A. Cameron, M.D., S.Sc.C., Cambridge, Fellow and Professor of Hygiene, R.C.S.I., Medical Officer of Health for Dublin, read a paper on the question, in the course of which he referred to what had been done in the way of erecting dwellings for the labouring classes in a number of towns in England and Scotland. He stated that the loans advanced under the Artisans' and Labouring Classes' Dwellings Improvement Act up to March 31, 1880, were:—for England, 1,419,970*l.*; for Scotland, 115,000*l.*; and for Ireland, 30,500*l.* Under the provisions of the Labouring Classes' Dwellings Act the loans raised in England and Scotland amounted to 394,741*l.*, and in Ireland to 66,654*l.* The Corporation of Dublin have put in force the provisions of the Artisans' Dwellings Act. They have completely cleared away a collection of dwellings situated under unhealthy conditions, at a cost of 22,000*l.*, and they have let the cleared site to the Dublin Artisans' Dwellings Company at a rent of 1,200*l.* a year. Another unhealthy collection of dwellings is being cleared away at a cost of 150,00*l.* A report, in which I have advocated the erection of dwellings for the lowest and most dependent classes of the population by the Corporation of Dublin, has just been unanimously adopted by the Public Health Committee; and, having been approved by the chairman of the committee, Mr. E. Dwyer Gray, M.P., I have little doubt but that his powerful influence, exerted as it is in the cause of sanitary reform, will induce the Corporation to expend a large sum in the erection of dwellings under the Labouring Classes' Dwellings Act. Roughly speaking, from 100,000*l.* to 200,000*l.* might be advantageously and remuneratively expended in this work. One of the most urgently required measures for the improvement of the sanitary condition of Dublin is the erection of a large number of dwellings for the lowest classes of the industrial population. The buildings which have been erected by the Dublin Artisans' Dwellings Company and the Industrial Tenements Company afford excellent accommodation for a large number of persons. The former have now 270 tenements, containing 1,243 inhabitants. But there are probably at least 10,000 married men—labourers, porters, and messengers,—whose weekly earnings do not exceed 15s.; there are some thousands of poor widows, with or without families, old worn-out men and single women, earning a precarious living, and residing in wretched dwellings. To all these classes of persons the tenements of the Artisans' Dwellings Company are as inaccessible as are the houses in Fitzwilliam-square to ordinary mechanics. It is more especially the dwellings of these classes that urgently require amelioration. The weekly rents paid by several thousands of the very poorest classes vary from 8d. to 2s. In the tenements which I have just described circulates no inconsiderable proportion of the poisons of the zymotic diseases, and more especially those of small-pox (when epidemic) and typhus fever. There are three acts relative to the erection of dwellings for the labouring classes, namely, — The Labouring Classes' Lodging Houses and Dwellings Act (Ireland), 1866, 29 & 30 Vict, cap. 44; the Labouring Classes' Dwelling-houses Act, 1867, 30 Vict., cap. 28; the Artisans' and Labourers' Dwellings Act, 1868, 31 & 32 Vict., cap. 130. I shall now enter into a brief description of the kind of dwellings which, in my opinion, should be erected. Each should consist of a two-storied house containing four rooms; the dimensions of two of these should be 12 ft. in length, 12 ft. in breadth, and 12 ft. in height, a capacity of 1,728 cubic feet, and two rooms 10 ft. by 10 ft. by 10 ft., 1,200 cubic feet. The house need only be of the plainest kind, but the stairs, doors, and window-frames should be strong, so as to resist rough usage; the cost of such a house would not be more than 125*l.*, and of the site, say 35*l.* If each house cost 150*l.*, then 666 could be erected for the sum of 100,000*l.* The average number of individuals per family is about 4·5, therefore the 666 tenements would provide for (at the rate of two families per house) 6,000 persons. For each tenement of two rooms the rent should be 2s. per week. This is somewhat more than many labourers pay; but I am sure there would be no difficulty in getting tenants for two good rooms at so low a rent. The existence of such 1,332 tenements would stimulate the owners or renters of the ordinary low-class tenemental dwellings to a healthy competition, which would be the means of causing a general improvement in the condition of the homes of the people. Would the erection of 666 tenement houses such as I have described entail a permanent burthen on the city? I do not think it would. Let at 10*l.* 8s. per annum per house, the revenue would be 6,364*l.*; 4,000*l.* a year interest (which would gradually extinguish the debt) on the loan required to build the houses would be paid out of the rent. Supposing that even a considerable number of tenants were defaulters, 1,000*l.* per annum would be more than sufficient to keep the houses in repair. It is regrettable that the humbler classes do not form themselves into building clubs for the purpose of purchasing or building dwellings for their own use. There are only two or three such associations in Dublin, but their capital is very small. The excellent building society which was established thirty years ago at Carlisle is one which I would gladly see copied in this city. The members of this society can borrow 100*l.* for the purchase of a dwelling, and repay the money in weekly instalments of 3s. 4d. during a period of 16¾ years. The income of the society in 1879 was 145,767*l.*, and the expenses of management only amounted to 468*l.* 11s. 4d., the fees paid to the committee being the modest sum of 15*l.* The capital of the society amounts to 427,198*l.*, and its members receive good dividends.

Mr. Edward Spencer, secretary of the Dublin Artisans' Dwellings Company, also read a paper on the subject, in which he gave an account of the operations of that company, who are spending 66,980*l.* in providing accommodation for 531 families, and then considered the best means of surmounting the difficulties by which the task of providing accommodation for the working classes of Dublin is at present surrounded.

After some discussion, on the motion of Mr. H. H. Collins, secretary of the Health Section, the following resolution was passed, with one dissentient:—

"That it is the opinion of this section that it is desirable that the Corporation of Dublin should seriously consider the propriety of providing dwellings for the labouring classes under the provisions of the various Acts of Parliament relating thereto, and that the Council be requested to submit to the Corporation this expression of its opinion."

## BURGLARS AND BUILDERS.

Dark nights and visions of making a fortune at one stroke are sufficient attractions for Bill Sykes and his fraternity to cause them to leave their domestic firesides and seek the residences of those whose households offer facilities for satisfying their desires. The tramp seeks more frequently than not but food and shelter for a night. The professional housebreaker seeks other spoils of a more valuable nature. The former individual is often a harmless, miserable, half-starved creature, driven by the pangs of hunger to desperation; enfeebled, perhaps, by disease, or emaciated through want of bodily necessities. When disturbed in his nocturnal rambles he is ofttimes supplicating in manner, seeking alms, or asylum from the weather, working on one's compassion rather than anything else. But the latter personage, the *crême de la crême* of the profession, does not rely on such feminine modes of satisfying his desires. He is powerful in brute strength, and aided by the implements of his craft,—the "jemmy," crowbar, revolver, or knife,—is sufficiently strong in himself as to experience no pangs of fear at being disturbed in the midst of his labours. Who knows but what the burglar feels sensations of pleasurable delight when encountering an unarmed and defenceless being at dead of night and alone? The sense of superiority that reigns within his soul, and the sensibility of the utter powerlessness of his antagonist, may, no doubt, create a gratifying sensation in the intruder's mind, armed thus *cap-à-pie*. Recent events rather seem to point to this, at all events. Shooting blindly at policemen with revolvers is undoubtedly the outcome of such ideas. Considering how open many houses are at the present time for such attacks, and what opportunities they present for attaining easy access to their interiors, it is rather a surprise that more care is not bestowed on such portions as offer peculiar facilities for accomplishing this. It is a question whether the subject of household defence rests more especially with the architect or builder. The former is distinctly responsible for the arrangement of such openings as windows, doors, &c.; and the last-named, the execution and final adjustment of locks, bolts, bars, window-catches, and similar means of defence. It is a fact, however, that too often the security of a dwelling is but a secondary consideration, the exterior beauty and form of the edifice being of pecuniary importance in the eyes of the builder as more likely to gain the object he has in view,—the speedy sale or letting of the mansion. "An Englishman's house is his castle," and as such should be treated in a manner befitting a structure of this nature, respecting the dangers to which it will be subject, and the uses to which it will eventually be put.

Iron bars intended to guard basement windows are, as a rule, easy of removal by mere strength of arm; window-panes may be cut through without an expenditure of much labour; catches are wrenched off with equal facility; locks are picked without difficulty, doors are prised open, and panels drilled through without employing much force or taking up any considerable time. It must, however, be owned, that burglaries frequently occur through the carelessness of domestics or those intrusted with the supervision of defensive fastenings. But still there is a wide margin on the other side, and one that admits of considerable improvement by the building trade.

Some time back there appeared in the pages of a comic weekly a series of cartoons descriptive of the shortcomings peculiar to the modern "builder." Amongst the illustrations were two which touched directly on the subject under consideration. The first of these represented a gentleman at an ironmongery emporium purchasing sundry bolts of massive construction. The second picture depicted one of the "Trade" doing the same, but in this instance the article purchased is of a more slender make, and is described there as giving "fifty to the ounce." "It is the custom of the trade," might be advanced as a suitable solution of the question, and an explanation of the difference that exists between the articles designed for the builder's use and those intended for that of the private individual. In many modern houses there is a tendency to place windows too near the ground, and to omit to protect some by suitable metal bars strongly fixed in the brickwork. Even this protection is in reality not wholly sufficient. Such windows should be provided with internal shutters of stout construction, for even if a bar were filed or bent away sufficiently to allow the burglar to cut a hole in the glass, move the catch, and open the window, it would be a difficult job, if not quite impossible, to break or remove a strong shutter fastened internally. Front windows, when on a level with balconies or broad cornices, should be secured by thick shutters inside, and this care should more especially be observed in the case of those abutting but a foot or so from the ground.

It is a curious fact that although so much attention is usually bestowed on hall-doors, the windows adjoining the same have escaped attention. We find, as a rule, such doors provided with a couple of heavy bolts, a strong lock, and a massive chain. Now it stands to reason that a burglar desiring to enter a house quietly and unobserved would certainly not choose a large and massive door facing the roadway to effect his purpose. In fact, one might say, without much fear of falling into error, that not one burglary in a hundred has ever been accomplished by this means. To abstract a pane of glass and open a window

is the work of a moment with a skilful thief, and a much easier task than drilling the panels of a strong and thick wooden door for the purpose of destroying the bolts or locks.

There is another source of danger, too, that lies in the *roofs* of many houses. The traps communicating with the leads are usually destitute of any fastenings whatever, and the same may be said of the trap-door which opens from the loft to the landing. These last always open inwards, so the task of removing them is not a very arduous one. Has the possibility never suggested itself to the householder that it would be a matter of no great difficulty to enter an empty house, climb to the roof, walk along the roofs of adjoining buildings, and then drop through, by means of a rope, to any desired habitation? This simple fact seems to have been quite forgotten; for we doubt if there exists one house that is adequately provided with suitable means for preventing this mode of entering its interior. A fruitful source of danger lies in these traps, and their security should be a matter of consideration amongst all whose dwellings are provided with such.

Then there is the question of coal and cellar flaps, conveniently placed for thievishly-inclined persons to get down into the basements of houses, and rarely, if ever, properly secured against removal.

The above points, necessarily briefly enumerated, all more or less concern the builder, and it should be a matter of importance with him to see them properly attended to.

It would be folly to say the building trade wanted "waking-up," but still a "hint in time" may, perhaps, like the proverbial "good stitch," prove of some use as a means of pointing out some flaws in the trade of an obvious nature, and, therefore, causing remedial measures to be taken in the future. A. J. D.

## PARIS.

The Rue de l'Abbé de l'Épée, near the Luxembourg, has been extended to the eastward for a length of about 330 ft., as far as the Rue Gay-Lussac. The western end of this street, between the Boulevard St. Michel and the Rue St. Jacques, is proposed to be widened, but this improvement cannot at present be carried out, as the widening would necessitate interference with the garden of the Deaf and Dumb Institution, which abuts upon the south side of the street. The Abbé de l'Épée (born in 1712, died in 1789), whose name is preserved by the street, was the founder of the Deaf and Dumb Institution in the Rue St. Jacques, and there is a statue to him in the court-yard, as well as a bust in the school-room.

On the site of the ancient prison of the Abbaye, which was finally destroyed by the construction of the Boulevard St. Germain, an open space or "square," as the French now prefer to call it, will be formed adjoining the ancient church of St. Germain-des-Prés, which will be called the Square de l'Abbaye. In the centre of this square it is proposed to place a statue of Bernard Palissy, the potter, whose name is also preserved in a small street in the neighbourhood.

The trees on the Boulevards of Paris are gradually disappearing, attacked by a disease which, up to the present time, has baffled investigation. It appears that the tree that best resists the effects of the atmosphere of Paris is the tree called by the French the *Vernis de Japon*, which was first introduced into France in the year 1871. Another tree which equally withstands the depressing influence of the metropolis is that called the *arbre du Judée*, distinguished by its red flowers and ample foliage. There are several examples of this tree in the squares of Paris. The *trianchonthos*, a thorny shrub, which frequently attains a height of 40 ft., appears also to flourish in the climate of Paris.

An exchange has been recently effected between the City of Paris and the French Government, by which the former has ceded to the latter a considerable space of ground situate on the west side of the city, called L'Île des Cygnes, in return for the site of the park of the permanent exhibition established in the Champ de Mars. This Île des Cygnes, like our own Isle of Dogs, although originally detached, now forms part of the City, and comprehends the Quai d'Orsay, the Government tobacco-manufactory, the esplanade of the Invalides, the suburb of Gros-Caillou, and a portion of the Champ de Mars. In the middle of the eighteenth century there existed *en aval du Pont de Concorde* a large island, containing about 250 acres (100 hectares). This island was then called the Île de Malequerelles, on account, as it is said, of the frequent disturbances which took place there between the students of the University and the inhabitants of the villages of Auteuil, Grenelle, and Chaillot. A celebrated resort of pleasure-seekers in the vicinity, known as the Moulin de Javelle, and numerous drinking-shops, attracted a large number of Parisians here during the summer months. On this island a large number of the bodies of the victims of the Massacre of St. Bartholomew were buried. According to a contemporary account, wagonfuls of corpses of both sexes and all ages were thrown into the river. These corpses were carried by the tide as far as the Île du Louvre and the Île de Malequerelles, where they were removed from the water, and interred to prevent danger from infection. The same document informs us that the number of bodies interred in the neighbourhood of St. Cloud and Auteuil was about twelve hundred.

In the reign of Louis XIV. the Île de Malequerelles acquired the more harmonious name of the Île des Cygnes. In later times the ground was gradually built upon, and recently a portion has been devoted to the service of the Garde Mobile and the Government Marble Dépôt.

A small island in the middle of the Seine, between the Pont de Grenelle and the Pont de Jena is still called the Île des Cygnes, and is a favourite resort of anglers.

## A CIRCLE RAILWAY FOR VIENNA.

After a long period of stagnation, greater activity is beginning to prevail again in the matter of providing better intercommunication than at present exists between the various parts of the Austrian capital. The local railway project, which has been allowed to slumber since 1873, has once more become one of the burning questions of the day, various plans having been submitted to the public, the project of Mr. Fogerty, an English engineer, of a circle railway being especially much talked about. The data which follow have been taken from the *Bautechniker*. The railway as planned would for its greater part (5½ miles out of a total length of little over 9 miles) be a high-level one, and run on an iron viaduct. Its object is to connect a central station, to be erected, with the existing termini and the other parts of Vienna and its suburbs. The central railway station is to be located at the Donaucanal, in the Franz-Josephs-Quai Park. Thence the line would run on an iron viaduct along the canal to the Aspern Brücke, and the slope of the left, or, according to the latest modification, the right, Wien-Ufer as far as the Schlachthaus-Brücke, in the sixth district, in which course all the bridges of the Donaucanal and the Wienfluss intersected are to be crossed by raised viaducts. At the Schlachthaus-Brücke the tracing turns into the Gürtelstrasse, which it follows as far as the Währingerlinie, and across which the line would run, according to the configuration of the ground, partly on viaducts, partly in cuttings or tunnels. The tracing then turns to the right through the Linienwall, passes through the ninth district, along the Alsbachstrasse to the Brigittabrücke, whence, along the Donaucanal, the junction with the central station is once more effected. From this closed circle a branch leads to the Franz-Josephs-Bahn, where locomotive and other sheds are to be erected. The maximum rise of the line will be 16·7 in 100, the minimum radius 533 ft. The permanent way is to have the normal gauge, and two lines of rails. Nineteen stations are projected, and a junction with the Westbahn and a branch to Schönbrunn and Hietzing are planned. The railway is to be completed in three years. The speed of the trains is to be only 18·6 miles per hour.

**London Sanitary Protection Association.** The first general meeting of this Association will be held at the Society of Arts, John-street, Adelphi, on Tuesday, the 25th inst., at eight p.m., Professor Huxley, F.R.S., President of the Association, in the chair. Professor Fleeming Jenkin, F.R.S, will give an account of the progress and success of the Association from its establishment up to the present time.

## LONDON REVISITED.

### BRITISH ARCHÆOLOGICAL ASSOCIATION.

At the recent meeting of the British Archæological Association at Malvern, it was proposed to repeat the experiment made last autumn,—and with much success, notwithstanding unfavourable weather,—by arranging for a few days in London for the special behoof of the country members of the Association. After a good deal of consideration, it was decided that the excursion should commence on the 14th and end on the 18th of this month, and with Mr. G. R. Wright, F.S.A., and Mr. George Patrick as hon. secretaries, and Mr. John Reynolds as treasurer, a very successful programme was arranged and entered on, the weather having been, on the whole, very favourable. We append some brief notes of the four days' visits.

*St. Paul's Cathedral*

was selected for the first visit, and accordingly, at about eleven o'clock on the morning of Friday, the 14th inst., a party of about sixty ladies and gentlemen assembled at the western entrance of the cathedral, where they were met by the Rev. W. Sparrow Simpson, D.D., F.S.A., one of the minor canons, and by him conducted over the building, beginning with the crypt, where some fragments of Old St. Paul's were pointed out. The tombs of Wren and other men distinguished in art were pointed out in the well-known "Artists' Corner," while the other "lions" of the crypt, foremost amongst which are the Nelson and Wellington sarcophagi and the Wellington funeral car, were regarded with much interest by the visitors. Ascending to the floor of the cathedral, the visitors were conducted into the choir and aisles, where the carving by Grinling Gibbons and the ironwork by Huntington Shaw, as well as the principal monuments, were pointed out. Upstairs in the Library of the cathedral, some rare books were brought out for the delectation of the visitors. All the pre-Reformation books belonging to the Library were burnt in the Great Fire in 1666. An inquiry by Mr. Lambert as to the cathedral plate elicited the reply that it was stolen in 1810. In the Trophy Room Mr. Edmund Ferrey's drawings of Old St. Paul's attracted a great deal of attention. Most of the party ascended to the Whispering Gallery, and tested for themselves the peculiar acoustical property of that part of the building. They did not go any higher, however, owing to the violence of the gale that was blowing at the time. Thanks having been accorded to Dr. Sparrow Simpson (who, it should be stated, recounted the interesting discoveries made during the last few years by Mr. Penrose, the surveyor to the fabric, on the sites of the old Chapter-house and Paul's Cross), the party proceeded to Anderton's Hotel, Fleet-street, for luncheon, and afterwards to the

*Church of St. Bartholomew the Great, Smithfield.*

Here Mr. Loftus Brock described the principal monuments in the church, including that of Rahere, the founder. This very well-preserved tomb is of much later date than the time of Rahere himself, having been restored by Prior Bolton, whose oriel window, having carved on it the punning rebus, a bolt or arrow driven through a tun or cask, is seen above one of the arches on the opposite side of the choir of the church. The monument in the south aisle to Sir Walter Mildmay, the founder of Emmanuel College, affords, as Mr. Brock observed, a good instance of the complete way in which the Classic styles had superseded Gothic at the close of Queen Elizabeth's reign. The date of this monument is 1589, and it is a pure example of columnar architecture. The monument contains some very beautiful detail, and is mainly of alabaster, inlaid with various coloured marbles.

Professor T. Hayter Lewis, in the course of a brief paper on the church, observed that so much had been said of late years as to the damage caused by the over-restoration of ancient buildings, that he would first point out that the parts of the ancient stonework which had been replaced were the two columns in the choir [those nearest the pulpit and reading-desk respectively], which were crushed and dangerous; the two centre columns of the semicircular apse [which had been destroyed altogether], a few parts of some other columns and piers which had been cut away for tombs, piers, &c.; and the tracery of the clearstory and north aisle

windows, which were noted in 1791 as being then destroyed. With these exceptions, the whole of the work is old. The history of the church was briefly this:—It was founded *temp.* Henry I. (1100-1135), by Prior Rahere, the founder, also, of the hospital, which was originally an infirmary for lying-in women and for children under seven years of age. Rahere was a prior of the order of Augustine or Austin (Black) canons. These canons had enormous influence, Mr. Parker noting that they possessed 127 houses in England,—amongst them being St. Mary Overie, Southwark, Stewkley, and Iffley. Rahere began the priory church of St. Bartholomew, it is stated, in 1103. The choir is said to have been consecrated in 1123, and the "rest of the work" ten years later, *i.e.*, in 1133. It was thus about co-eval with the naves of Durham (1099-1128), and of Norwich (1121-1145), and with the choir and eastern aisles of the transepts of Peterborough (1118-1155). The choir of Norwich (1096) was somewhat earlier, but only by a few years. The east ends of the choir of Norwich and of the choir at Peterborough were apsidal. St. Bartholomew's was apparently from the first a completely Norman building, having an eastern apse with a processional aisle round it. It also had at least three towers, as was shown by a seal attached to a charter dated 1133 ("Archæologia," xiv., p. 49; Dugdale, ii., p. 380). This seal was supposed to represent the south side of the church and of the Lady Chapel. The church seems to have been completed in 1133, when Archbishop Boniface, of Savoy, made his celebrated visitation. He (Prof. Lewis) had not been able to find out anything about the nave, if one existed at that time, but he had thought that by looking up some of the old writers who mentioned the scene that took place on the occasion of the archbishop's visitation, he might be able to throw some light on the subject. It would be remembered that great scandal was caused in the church from the fact that in the course of a scuffle in which the archbishop took part, he was found to be wearing a suit of armour beneath his ecclesiastical robes. He had turned to Matthew Paris, and he had met with a rather curious passage, which he did not think had been noticed elsewhere. Matthew Paris said (according to Mr. Giles's translation) that the monks received the archbishop in the middle of the church, that is, the choir ("*In medio ecclesiæ, videlicet, in choro*"). The nave, anyhow, was rebuilt somewhere in the thirteenth century, in, of course, the Early English style. Considerable alterations were made in the church by Prior Bolton (1526-32). In 1544, Henry VIII. sold the priory house, with dormitory, chapter-house, cloisters, refectory, &c., ordering that the church should be a parish church, as it is now. The ground, 87 ft. long, rendered vacant by the destruction of the nave (which was then pulled down) was reserved for a burial-ground. The piers to the south aisle of the nave were standing until 1856, when they were pulled down to widen the path. The bases were left underground, but are now to be seen, as the ground has been lowered. The ugly brick tower at the present west end of the church is said to have been built in 1622-28 in place of the steeple which was then pulled down to its foundation. The whole church was doomed to destruction at the beginning of the present century, on the plea that it was dangerous, and it was only saved by the energetic efforts of an architect, Mr. Hardwick, an ancestor of the present architect of that name. At the east end of the choir, behind the apse, are considerable remains of a large building, which was evidently entered from the church by an opening about 20 ft. wide, the piers of which remain, and are of Perpendicular masonry, and have Perpendicular capitals. Probably two detached columns came between these, and it was very likely that the whole was erected at about the same time as the eastern straight wall cutting off the apse. An oratory was mentioned here as dedicated to the Blessed Virgin (Cottonian MSS.), but it was not likely to have been built in Norman times, as the external buttresses, as well as the piers just described, are of late date, and a Lady Chapel beyond the apse was not common in Norman work. There is one at Norwich, but it was added in the thirteenth century. Beyond the church were the buildings of a complete monastery, inasmuch as the Austin Canons, though not monks, nor, of necessity, priests, lived much as monks did, and with the same kind of monastic buildings. Of these, an excellent notice exists in the *Gentleman's Magazine*, vol. 79 (pp. 226-7), describing their state in 1791. The east cloister only then remained. It was used as a stable. It is now all gone, having fallen down in 1833. There is a perspective drawing of it in Stow's "London." On the east side of the cloister was the chapter-house, of oblong form and of Henry III.'s time (1216-72). The walls in 1791 remained 3 ft. or 4 ft. high, the space enclosed by them being used as a wood-store. The walls are now destroyed and the space built over. Directly against the south aisle was a small chapel, described as "magnificent," having a grand entrance from the south transept and another from the church. Of this, except the latter doorway, no trace remains. The north transept was quite destroyed, and the site was then, as it still is, occupied by a smith's shop. The south transept remained, but it was unroofed, walled-out from the church, and used for burials. This, too, is now destroyed. A good drawing of it is given in Wilkinson's "Londinia Illustrata," 1819. The nave is stated to have been pulled down in Henry VIII.'s time. The series of vaults abutting south of the chapter-house were of great extent, upwards of 130 ft. long and 30 ft. wide, groined from the walls on each side on to a central row of pillars (round and octagonal alternately), and formed, no doubt, the ground-story of the dormitory which existed here, as at Westminster, Battle, &c., with a passage over the chapter-house as a ready access for the monks to the church. The whole of this has been removed quite recently. In 1868 the restoration of the present church (*i.e.*, the choir of the old church) was taken in hand by the late Mr. Slater and Mr. Lewis, under the direction of a committee, whose chief members were the present Rector, the Rev. J. Abbiss, the late Mr. J. Boord, Mr. Foster White, and the late Sir William Tite. The condition of the church was then briefly this:—It was filled to a depth of between 2 ft. and 3 ft. with earth, which had been filled in, owing, no doubt, to defective drainage at the old level. The two columns already alluded to were crushed and in a dangerous state, owing to a defective foundation. The apse was cut off by a straight wall, the upper part of which still remains, supported on an iron girder; and the space behind it over the eastern aisle, and the large building behind it, supposed to have been the Lady Chapel, were occupied as a fringe manufactory. This wall was built in Perpendicular times, as is shown by the portions of window-jambs which still remain. The wall of the north aisle had been forced out, and the arches were very unsafe. The north triforium was used (as it still is) as a school, and the south triforium was destroyed. There was a huge gallery at the west end, and the space on the ground level, under the south transept aisle, was enclosed as an access to the Vestry, which was, and still is, over the transept-aisle. What was done in the restoration was this: The earth was cleared out, the exact level of the old paving ascertained, and the whole site drained. An exact plan was taken of all the gravestones, which were carefully marked and replaced precisely under their original positions. The two columns referred to, and those required to complete the apse, were rebuilt with large stones, so as to show the precise amount of new work. The wall of the north aisle was raised by levers to an upright position, as had been done before at Hereford, and since (on a much grander scale) at St. Alban's. A new foundation was prepared, and the wall and arches raised without injury to a single stone. The most important part of the work, however, viz., that to the apse, remained to be done. Possession could not be obtained of the factory at the back of the wall, and, after earnest consultation with the Architectural Committee of the Incorporated Church Building Society, the architects for the restoration advised that the original plan of the lower part of the apse should be restored, though the upper part could not be, and the lower part of the wall was therefore cut away and supported as now seen. In removing it, it was found to be largely built of fragments of Norman and Early-English work, the greater part of which has been preserved at the east end of the south aisle. There also, against the wall, is preserved all that could be found of the old paving tiles. The stonework throughout was thickly coated with numerous coats of whitewash and colour, but as the architects feared to have the stone injured, it was merely scraped with wooden scrapers, and where these were insufficient, or where the stone was merely dirty, the old surface was left untouched otherwise than by washing. The effect was, no doubt, to leave the church in a not very clean state; but, on the other hand, the old work was uninjured, and in many places the fine diagonal tooling of the Norman masonry can be seen as it was left some 750 years ago. At the west end, beyond the central tower, are clear indications, both in the aisle and above, of the Early English work of the nave. The transept arches of the crux are pointed, whereas those of the east and west are round. Now these pointed arches could scarcely have been of earlier date than 1175 or 1180, and it is an open question as to whether they were delayed in building until that date, or whether they were afterwards re-set, as in the well-known case of the aisle-arches at York next the central tower. Professor Lewis said he had examined them carefully from a ladder, but could see no evidence of this, and his opinion as to their being really of later date than the east and west arches was strengthened by the fact that the arch-mouldings were also somewhat different. But some very curious alterations had taken place in this part of the church. The Norman corbels to the west arch had been re-carved as Perpendicular. Some of the Norman stonework at the base of the north-east pier has been replaced by Perpendicular, and the capitals of the columns of this and the opposite (western) pier have been altered to Perpendicular. The clearstory windows to the Norman clearstory wall were filled in with Perpendicular tracery, and the east end of the choir had been continued square, above part of the circular apsidal wall, up to the east wall which, in Perpendicular times, had cut off the apse. All this work has been left untouched, except as before described, so that an architect going over the old church now could read its history, so far as the dates and the changes are concerned, almost as well as though the writing were in a book instead of being placed indelibly on the stones. Professor Lewis concluded by detailing the differences in the tooling and other characteristics of masonry of various periods, and told an amusing story of a learned archæologist who had conceived a theory that the church had been built to a large extent under the influence of Byzantine architects, because he had discovered that the groining of the south aisle was domical. Unfortunately for his theory the groining was of lath and plaster, put up in the year of our Lord 1830 by Johnny Bligh, district surveyor.

Mr. Loftus Brock, in some supplementary observations, said it was impossible to look at the church without coming to the conclusion that a nave had existed at some early period of the history of the fabric. He cordially endorsed all that had been said by Professor Hayter Lewis as to the arches which supported the central tower. On behalf of the visitors, he expressed thanks to the rector, Mr. Abbiss, who was present, for kindly permitting the examination of the church, and to Professor Hayter Lewis for his interesting discourse. After a few remarks to the same effect from Mr. Wright, the visitors proceeded to

*St. Bartholomew's Hospital,*

where Professor Hayter Lewis, who is one of the Governors, introduced them to the Clerk of the Hospital, Mr. Cross. In the large Hall of the Hospital, approached by the grand staircase (painted gratuitously in 1736 by Hogarth,—the subjects being "The Good Samaritan" and "The Pool of Bethesda"), the visitors were shown by Mr. Cross an interesting series of documents and seals,—all, with the exception of the charter granted by Henry VIII., of pre-Reformation date. One of these documents bears the seal of Rahere. Several of the seals are perfectly preserved. It was stated by Mr. Cross that many of these documents had never been carefully examined in modern times, though possibly the perusal of some of them would amply compensate for the time and trouble needed for the work. Thanks having been given to Mr. Cross for his courtesy, a large number of the party proceeded through the City to see the

*Roman Remains beneath the Coal Exchange.*

These consist of portions of a hypocaust evidently belonging to baths, although, said Mr. Thomas Morgan, there seemed to be some difficulty in ascertaining whether the hypocaust formed part of public baths or of baths belonging to a private dwelling. It was most probable,

considering their smallness, that they belonged to a private dwelling or villa. When the remains were first discovered, in 1848, they were described in the *Journal* of the Association. They are enclosed on one side by a semicircular apse, and are protected by a large cage of ironwork. It was mainly through the efforts of the Association, in conjunction with the late Mr. Bunning, architect, that these remains were preserved *in situ*. Eleven years later, *i.e.*, in 1859, further excavations made to the eastward of these remains brought to light a corresponding apse opposite to the one already mentioned. Mr. Morgan gave an account of Roman baths and bathing, and was thanked by the visitors for his discourse. In answer to a question whether, seeing that the level of the floor of the villa must have been at least 10 ft. or 12 ft. below the present level of Thames-street, the water of the Thames in Roman times was kept back by any sort of dyke or embankment on the Middlesex side, or whether the Thames did not then rise to anything like its present height, Mr. Brock said he thought there was good evidence for supposing that in Roman times the northern bank of the river was embanked eastward from London Bridge for some considerable distance, for a few years ago a Roman jar was discovered in the bank or dyke near North Woolwich, — an ancient defence which prevents thousands of acres of land from being flooded by the river.

The proceedings of the first day were wound up with a dinner at the "Criterion." On Saturday, the first place visited was

*Barber-Surgeons' Hall Monkwell-street.*

Here the visitors were received by the Worshipful Master, Mr. Woolley, and by Mr. Past-Master C. J. Shoppee. The last-named gentleman described the very interesting and large collection of plate belonging to the Company, and also said a few words about the Court-room and the pictures which it contains. The hall was built by Inigo Jones, and partially destroyed in the Great Fire. The present Court-room, however, is supposed still to retain the ceiling given to it by Inigo. In 1863 Mr. Shoppee acted as architect to the Company in designing and superintending the erection of the warehouses and offices which now occupy a large portion of the site of the ancient buildings of the Company. At that date the quaint old wooden doorway (dated 1671) which, until then, formed part of the Monkwell-street frontage, and which was illustrated in an early volume of the *Builder*, was removed to the interior of the small courtyard which now gives access to the Court-room, and utilised as an entrance. Of the pictures at present in the hall, the centre of attraction was, of course, the celebrated one by Holbein, representing the presentation of a charter to the Company by Henry VIII.; but there are several other interesting canvases here, including a portrait of Inigo Jones by Vandyck. Mr. Lambert read a very entertaining paper on the history of the Company, tracing the origin of the connexion between barbers and surgeons, and detailing the causes that led to the separation of the two callings in comparatively recent times. Thanks having been given to Mr. Woolley, Mr. Shoppee, and Mr. Lambert, the party made its way to the neighbouring

*Church of St Giles, Cripplegate.*

Here Mr. Brock described the architecture which is late in date. It is a very good example of a town church, and, in common with that of St. Andrew Undershaft and two or three other specimens of City churches, is in all probability a counterpart of many of those which were destroyed by the Fire. A peculiarity noticeable on the north side of the arcade, which is continuous throughout the whole length of the church, is that a narrow strip of space is left between the detached shafts of the pier. This peculiarity did not occur on the south side of the arcade, although it is in a line, carried transversely, with the recess for the staircase to the roodloft, the position of which staircase is still clearly to be seen on the exterior of the south wall. The more ancient church which formerly existed here had been rebuilt in Perpendicular times very much as it now existed. The roof is entirely new, but no doubt the original roof of the present building was like it. The restoration was carried out a year or two ago by Mr. Woodthorpe. The church is, however, interesting on other than architectural grounds. John Speed, the antiquary, was interred here, and there is a small monument to his memory on the south side of the church. Foxe, the martyrologist, was buried here, and there is a plain tablet to his memory at the west end of the church. John Milton was also buried in the church. The registers, which seem to be well taken care of, contain some interesting entries, including that of the marriage of Oliver Cromwell and Elizabeth Bourchier. Mr. Lambert remarked upon the fact that here, at the cripples' gate of a walled city, there existed a church dedicated to St. Giles, while in the walled cities of Germany, such, for instance, as Ratisbon and Nuremberg, it was invariably the case that there was a church dedicated to St. Gideon (another way of spelling Giles) near the cripples' gate. Proceeding outside the church, the visitors inspected

*The Bastion of Old London Wall,*

in the churchyard adjoining this church. This bastion is now within reach of sight by anybody, owing to the improvement recently made in carrying a public footpath through the churchyard from Jewin-street to Monkwell-street. South of this bastion is another which is concealed from view by buildings in Castle-street, Falcon-square.

*The Church of St. Mary-le-Bow,*

in Cheapside, was next visited. The church is now undergoing internal renovation. Wren's work was much admired by many of the visitors, but the chief point of interest for the party was the Norman crypt. Mr. Gwilt, who repaired the church early in the present century, described the crypt to the Society of Antiquaries in 1829. As he then pointed out, it affords the earliest Norman work known to exist in the City. The stones are all small in size, the joints are wide, and the details of the caps indicate the early character of the work. In one of the arches, now blocked up, Roman tiles are used as voussoirs. The two pillars now seen by visitors on entering the crypt are two out of six which divided the area into three divisions,—a centre and two aisles, so to say. Wren, in the "Parentalia," says that when the steeple of the present church was in progress he found the remains of a Roman temple, but Gwilt was of opinion that Sir Christopher must have mistaken this crypt, containing as it does Roman *material*, for Roman *work*. The church was formerly known as St. Mary de Arcubus, and St. Mary of the Arches, and, as Mr. Patrick reminded the visitors, the ecclesiastical tribunal known as the Court of Arches derived its name from having held its sittings in this church. At the

*Chapel of St. Etheldreda, Ely-place, Holborn,*

which was next visited, the party was received by the Rev. Father Lockhart, who described the history of the building, which was probably the last place in London in which the old rites were used, for in the time of Elizabeth and James I. it was let to the Spanish Ambassador, who used it as a chapel. In the time of Charles I. it was used for the Anglican worship. About a century ago the property was bought by a builder, who pulled down the other remaining parts of the palace of the bishops of Ely, and built the street now known as Ely-place upon the site, but he retained the chapel, and let it as a proprietary chapel to a minister of the Church of England. It was subsequently used by a congregation of Welsh Episcopalians, and, a few years ago, the property having got into Chancery, was sold by order of the Lord Chancellor. In all its essential features, particularly as to the two magnificent end windows, it remains intact. The roof, with the exception of the tie-beams, is the original one. There are one or two interesting features in the crypt or undercroft, which, at one time used for the storage of beer by Messrs. Reid, the brewers, was, at another period, and concurrently with the use of the chapel for religious purposes, occupied as a tavern,—drunken brawls below frequently disturbing the congregation above. The visitors having thanked Father Lockhart, next partook of luncheon at the Holborn Restaurant, and subsequently went to

*Sir John Soane's Museum, Lincoln's Inn Fields,*

where they were received by Mr. James Wild, the curator, and some of the trustees. They spent some considerable time in inspecting the large and varied and but too-little visited collection of objects of art and antiquity. The space in certain portions of the museum is so limited, and the visitors were so numerous, that they could not be conducted *en masse* over the premises. They therefore divided themselves into small parties, visiting the different apartments, under the guidance of Mr. Wild, Mr. Lambert, Mr. Thomas Blashill, and other gentlemen. Thorpe's book, and the collection of drawings by Adam, were examined with interest.

*Staple Inn, Holborn,*

was the last building on the programme for Saturday, and thither a considerable number of the visitors wended their way. The inn, which is known to most Londoners by the picturesque old overhanging houses which form the Holborn front, is, as was explained by Mr. Burrell, one of the Inns of Chancery (not Inns of Court), and the hall is probably the best of those which remain in connexion with the Inns of Chancery. Originally each of the Inns of Chancery was attached to one of the Inns of Court, and the Inn of Court to which Staple Inn was attached is Gray's Inn. The Inns of Chancery were, indeed, originally overflow hostelries for receiving the students who could not be accommodated by the Inns of Court. Mr. Brock, in describing the hall, commented on its similarity to those of the Middle Temple and Lambeth Palace,—the former being the earliest and the latter the latest of the three. It was very gratifying, he said, to see it maintained in such good preservation, and it was to be hoped that the Principal, Antients, and Members of the Society of Staple Inn would continue to take care of the interesting buildings which vested in them. Before the visitors left the hall, they thanked Mr. Burrell for the interesting particulars given by him concerning the inn.

*York House Water Gate.*

On Monday morning the visitors mustered on the Victoria Embankment, opposite Cleopatra's Needle, and after a few remarks about the obelisk by Mr. Lambert, they crossed the road and entered the gardens, in order to proceed to the front of the water-gate attributed to Inigo Jones, and which is now, as we have often pointed out, half-buried in a hole at the foot of Buckingham-street. It was formerly the river-entrance to York House, of which it is the only remnant. Mr. Wright recounted the efforts which were made a few years ago by the British Archæological Association to induce the Metropolitan Board of Works to allow the gateway to be raised *in situ*, and utilised as an entrance from Buckingham-street to the Embankment-gardens, but the result of those efforts was unsatisfactory, the Villiers family or their representatives interposing some objection. Taking train by the District line from Charing-cross to Sloane-square, the visitors soon arrived at

*The Royal Hospital, Chelsea,*

which, as recorded in the Latin inscription over the colonnade, was founded by Charles II., and completed in the succeeding reigns of James II. and William and Mary, for the purpose of affording a home to soldiers disabled by wounds or age. The visitors were received and conducted over the buildings by the Governor (Sir Patrick Grant), the Major and Lieut.-Governor (Colonel Wadeson), and the Chaplain (the Rev. S. Clark). The foundation-stone of the hospital was laid in 1682, and the main building was completed and opened in 1692. The architect, Sir Christopher Wren, became a Commissioner of the Hospital in 1691. Besides the hall and chapel, the main building contains berths or bunks for 538 men, all separately enclosed, besides library, kitchen, and other apartments. The most important addition made to the buildings since Wren's time is the Infirmary building, a detached structure on the west side, adapted in the year 1809 from a house in which Sir Robert Walpole had resided. Sir Robert Walpole's drawing-room, now used as one of the wards, was inspected by some of the visitors. It has a very good enriched ceiling. The excellent woodwork in oak in the chapel and the great hall (formerly used as a dining-hall, but now as a general day-room) was much admired by the visitors, who also evinced much interest in the numerous tattered flags, trophies of war, suspended from the walls of those apartments. In the state-room of the Governor's House, some valuable pictures were shown, including a large canvas by Vandyck representing Charles I. and Queen Henrietta Maria and children. This room also contains a very fine carved mantelpiece, by Grinling Gibbons. Having thanked Sir Patrick Grant and the other officials of the

Hospital for their courtesy, the party proceeded along the Chelsea Embankment to

*Chelsea Old Church,*

where Mr. Loftus Brock pointed out some fragments of early work in the Lawrence chapel, on the north side, but none of the work to be seen was earlier than the middle of the fourteenth century. Two singular capitals, on the south side of the chancel, were known to be of Sir Thomas More's time, for they were dated 1528. Sir Thomas More's connexion with the church was briefly dwelt upon, and it was observed that the monuments were the chief feature of interest in this curious old building. Pointing to the monument containing a figure by Bernini, of a lady of the Cheyne family, Mr. Brock observed that it was a beautiful piece of workmanship, and was worthy of being kept in a better state of repair than it apparently is. Passing round at the west end of the church, the visitors saw the chained books,—a survival from Mediæval times. Perhaps the finest monument in the church is that of Lord and Lady Dacre, in which the recumbent effigies are of alabaster, the remainder of the monument being of very rare marbles. It dates from the latter part of the sixteenth century. The monument of Lady Jane Guildford, who died in 1555, is one of the most ancient in the church. That of Sir Robert Stanley, dated 1632, though very costly, is more curious than beautiful. After thanking the clergy for permitting them to see the church, the visitors partook of luncheon at the Pier Hotel, Cheyne-walk, and afterwards proceeded in carriages to

*Holland House.*

Through the principal rooms of this "stately home,"—which, besides being abundantly rich in historical and literary associations, is a storehouse of objects of art and antiquity,—the party was conducted by Mr. Lane, the house steward. After the visitors had spent more than an hour in feasting their eyes with the treasures they beheld, Mr. Wright gave a brief historical sketch of the history of the owners and occupants of the house, quoting from the Princess Lichtenstein's book and from Leigh Hunt's charming work "The Old Court Suburb." Mr. George Lambert then read a brief paper on Inigo Jones, detailing the leading incidents in his career, and pointing out how, on his work at Holland House, he had left the impress of his studies in Italy. Mr. Loftus Brock, in some supplementary observations, remarked that in the celebrated book of plans by John Thorpe, in the Soane Museum, seen by some of the visitors to the Soane Museum, there was a plan inscribed "A House at Kensington for Sir Walter Cope, by me, J. T." That plan showed the exact amount of the work done by Thorpe at Holland House. He thought, however, that without reference to that plan it would be possible to tell which was Inigo Jones's work by the stone used. Wherever Portland stone was used, there it might be safely concluded that the work was by Jones. Before leaving the house, Mr. Wright moved, and Mr. Patrick seconded, a vote of thanks to Lady Holland for permitting them to visit the mansion, and to Mr. Lane for conducting the visitors through the apartments. All who have been privileged to go over Holland House will reciprocate the sentiment of the lines (seen by many of the visitors on Monday), written in 1811 with a diamond by the Right Hon. Jno. Hookham Frere on the glass of a dressing-room window in the east turret,—

> "May neither fire destroy nor waste impair,
> Nor Time consume thee till the twentieth heir.
> May Taste respect thee and may Fashion spare!"

Tuesday was the fourth and last day of this London outing of country members. Assembling at the Charing-cross Station of the District Railway, at ten a.m., they proceeded by train to the Fulham Bridge Station, whence they walked to

*Fulham Palace.*

Here the Right Rev. Dr. Jackson, Bishop of London, received the visitors, and conducted them over the older parts of the palace buildings. The oldest part of the existing buildings is what is known as the Bonner quadrangle, although it was built by Bishop Fitzjames, in the reign of Henry VII. Over the fireplace of the hall is the following inscription:—

"This hall, with the adjoining quadrangle, was erected by Bishop Fitzjames, in the reign of Henry VII., on the site of buildings of the old palace as ancient as the Conquest. It was used as a hall by Bishop Bonner and Bishop Ridley during the struggles of the Reformation, and retained its origine proportions till it was altered by Bishop Sherlock, in the reign of George II. Bishop Howley, in the reign of George IV., changed it into a private unconsecrated chapel. It is now restored to its original purpose on the erection, by Bishop Tait, of a new chapel of more suitable proportions. A.D. 1868."

Some of the rooms upstairs in the old portion of the palace, now used as domestic offices, were seen by the visitors, and found to contain some good linen-pattern panelling in oak. A question was raised whether the existing bargeboards on the gables facing the river were the originals. The oak of which they are made is certainly very much weatherworn. The new chapel, mentioned in the foregoing inscription, and erected from the designs of Mr. Butterfield, was next visited, and subsequently the library and other rooms in the palace were inspected, chiefly for the sake of the interesting and unbroken series of portraits of bishops of London, beginning with Ridley. In the grounds of the Palace the Bishop pointed out the sad havoc made by the storm of the 14th inst. No fewer than thirty-seven fine trees, many of them of great interest (including the celebrated black walnut-tree), fell before the gale. Similar disasters were met with in Holland Park, in Bushey Park, in the grounds of Hampton Court Palace,—and, indeed, almost everywhere.

Having thanked the Bishop of London for his kindness, the party left the Palace, expecting, on the faith of the programme, to find carriages awaiting to take them on to Kingston. The fortunate few who had their own private carriages were enabled to drive on to Kingston, *viâ* Wimbledon, but the great majority of the excursionists were doomed to suffer a provoking delay, for no carriages were at hand. After a time, it was discovered that, by some inexplicable blunder on the part of somebody or other, the carriages had been sent, not to the Bishop of London's Palace at Fulham, but to the Archbishop of Canterbury's Palace at Lambeth! However, the party ultimately arrived at Kingston, and the majority of them were fortunate enough to get their luncheon at the "Griffin." Just two hours late they arrived at Hampton Court Palace. It was now nearly five o'clock, and getting dusk, and as the greater portion of the Palace was closed at four o'clock, it goes without saying that the belated visitors saw very little of the building and its contents. Mr. Chart, the courteous clerk of the works at the Palace, conducted the party into the great hall, but beyond this, little could be done, and so terminated, somewhat ingloriously, what has been, on the whole, a very successful and interesting series of visits.

## INTERNATIONAL COLONIAL EXHIBITION IN AMSTERDAM.

The Dutch Government is already beginning to make preparations for the holding of an International Colonial Exhibition in Amsterdam from May to October, 1883. This project is quite unique in its kind. The Dutch Government has submitted to the various powers possessing colonies the programme of the proposed exhibition. This is accompanied by remarks on the advantages of diffusing information respecting regions of the globe which are only waiting for the application of capital and technical skill to yield almost incalculable wealth. It is intended in the coming international display to illustrate by a certain class of the exhibits the growth of colonies; in short, to show what they were and what they are. The exhibition will be divided into five sections. In one of these raw materials and colonial produce generally will be illustrated. The public works and means of communication, the military and naval resources, as well as the *fauna* and *flora* of the various colonial regions, will be all well represented. Another section of the exhibition will deal with the export trade of the colonies, and here the extent to which European manufactures depend on the raw products of the colonies will be fully illustrated. The third section will illustrate the progress of art amongst colonial races, and will show the influence of civilisation upon their condition. In the fourth section will be given an exhibition of articles produced in the Netherlands which are adapted for colonial use. The fifth and last section will be an entire novelty. This division of the exhibition is intended to illustrate by a series of lectures and addresses from gentlemen of experience and authority, the best methods of developing the enormous resources of the colonies. They will also deal with the subjects of science and art, education, sanitary matters, acclimatation, and international law in reference to colonial dependencies. The economical effects of the relations existing between colonies and the mother country will likewise be the topic of special discussion.

In order to achieve the success contemplated by the Dutch Government in starting this exhibition, the co-operation of all the powers possessing colonies will be necessary. It is hoped, therefore, that Great Britain, France, Spain, Portugal, Russia, Denmark, and Sweden,—these being, in addition to Holland, the only States possessing colonies,—will cordially accept the invitation of the Dutch Government, and cause their various dependencies to be appropriately represented.

## THE OLDEST GERMAN TOWN-HALL.

The oldest town-hall or "Rathhaus" of Germany appears to have been discovered at Gelnhausen, in Hessen. Not far from the Romanesque church restored for Protestant worship by Dombaumeister Schmidt, of Vienna,—of whom we speak in another article in connexion with the erection of the most recent town-hall in that city,—an undoubtedly Romanesque building has lately been disclosed. It is still disfigured and quite hidden by a flat building of framework with lean-to roof, and looks, in its present state, like a large dilapidated barn, which is partly used for stacking hay and corn, partly left to ruin. We hear that it is intended to free the building from its encumbrances, and restore it as far as possible. There is still in existence a basement with vaults of fir, a large hall over it, as well as another hall in the first story, reached by a small winding staircase. The large hall on the ground-floor is approached by a portal, still preserved, in the centre of the principal front, the left corner pillar of which stands clear, while only so much of the right-hand pillar is uncovered as enables the Romanesque capital, as richly ornamented, but differently formed, to be seen. The archivolt, half of which is disclosed, shows simply a plain thick bead in a rectangular band. The large hall, which is 43 ft. long and 29 ft. wide, and on the longest side of which is the entrance, has a ceiling of timbers resting upon wooden bearers. The latter are supported by two square and bevelled stays of oak resting upon carved brackets, the hall being thus divided into three equal portions. Traces of window railings appear to be still existing at the left gable, but at present examination is difficult.

The hall in the first story corresponds to the lower one in size, as well as regards the construction of the ceiling and the wooden bearers and stays; but here three well-preserved windows of three round-arched openings each may be noticed in the façade. As usual in buildings of that period, there are no rebates. Each window shows right and left plain rectangular soffits; the round arches are also entirely without decoration, although each is turned very regularly, and consists of three very correctly-worked arch-stones. The intermediate supports of the different windows are formed in the case of the two to the left each by two round, in that of the one to the left by two octagon chamfered pillars. The latter are very slender, a symmetrical stone corbel jutting out on both sides, forming the connexion with the rather thick walls. The profile of the corbels consists, over the Romanesque foliage capitals, variously worked, of a hollow, small perpendicular slab, and round bead with slab over it. The thickness of the wall is flush with the latter. The capitals of the columns and octagon pillars end below in angular fillets; the bases show the attic profile, with plinth underneath. On the wall opposite to the window-front may be seen also plain sandstone slabs let in, which were probably intended as a support for a fireplace, not completed.

Great hopes are entertained that, after completely uncovering the building, more discoveries of architectural interest will be made. The ground-plan, as well as the position of the building in the centre of the old free-town of Gelnhausen, close to the church and the market-place, and the style itself, are said to justify the supposition that we have to deal here with the principal remains of its former town-hall, which would, in that case, probably form the oldest municipal building still in existence in Germany. The Romanesque forms of the building point to the conclusion that it was erected at about the same time as the celebrated

palace of the Emperor Frederick Barbarossa. The latter edifice, on an island in the Kinzig, near Gelnhausen, must have been completed about the year 1146.

The romantic ruins of the palace, surrounded by pretty gardens, and overgrown by luxurious ivy, are not esteemed and visited by archæologists and tourists as they deserve. Perhaps the recently discovered interesting remains of the building which form the subject of this note will draw renewed attention to the venerable town of Gelnhausen, once the scene of much imperial splendour.

## NEW ENGINEERING WORKS, BELVEDERE ROAD.

Large new buildings are at present in course of erection in Belvedere-road, Lambeth, for Mr. Brotherhood, ironfounder and engineer, whose present works are in Compton-street, Goswell-road. The site of the new buildings adjoins the premises of Messrs. Lucas Bros., and was until recently occupied by Messrs. Holland & Hannen, who have removed their works to Nine Elms-lane. The buildings, and several workshops in connexion with them, will cover an area of about 20,000 superficial feet, having a frontage to Belvedere-road upwards of 80 ft. in length, with a depth to the river, including a spacious wharf, of 260 ft. The block facing Belvedere-road consists of a building, two stories in height, in stock brick and red-brick-arched window-heads and dressings. Above an arched gateway, 10 ft. in width, in the centre of the elevation, is a handsome projecting oriel window in Portland stone. Each side of the gateway entrance to the interior of the premises is faced with white and blue enamelled brick. This block will contain the drawing-room, pattern-room, and the several offices.

From the gateway entrance to the extreme boundary of the wharf on the margin of the river an iron floor and tramways are laid down along the centre of the enclosed area within, the several fitting and other works, with machinery, being on each side of the central tramways, and having wooden floors laid on a deep bed of concrete. Above these there are also galleries on each side containing similar workshops to those on the ground-floor. The floor of the upper workshops is composed of fireproof arches, resting on ranges of strong iron columns, 18 ft. in height, with lattice ironwork in front for protection. This portion of the building is 45 ft. in height, and is covered in with a glass and slate roof supported on iron trough-girders. The foundry portion is at the west end of the premises, in immediate connexion with the wharfage space. The engine and boiler house will be at the north-west angle, with two lofty chimney-shafts overlooking the river. The foundry will be 60 ft. in height, and covered in with a roof similar to that over the fitting-shops.

The architects of the buildings are Messrs. Hunt & Stewart, of Victoria-street, Westminster, and the contractors Messrs. Smith & Co., of South-street, Grosvenor-square. Mr. G. Crane is clerk of the works.

## SCHOOL AT LATHOM.

The accompanying drawings represent a school in course of erection at Lathom, near Ormskirk, for, and at the sole cost of, the Right Hon. the Earl of Lathom, the children of whose tenants and workmen will receive a free education therein. It is being erected on the site of the old school (recently demolished), which, with its thatched roof and dormer lights, was of a very quaint and picturesque character, so much so that we consider the accompanying sketch may be of interest to some of our readers, reminding them of days gone by when the children instructed within its walls were taught to form their letters in sand, kept in a box in each desk for that purpose. Some of these desks (minus the sand) were in use up to the time of its demolition, a few weeks ago. The date of its erection cannot be ascertained, but no doubt exists as to its having been in use considerably over 120 years.

The site is immediately outside, and on the west side, of Lathom Park, and with all its surroundings is beautifully situate within half a mile of Lathom House, his lordship's seat, whilst on the north side, about 100 yards away, is the vicarage, erected by Lord Lathom about four years ago. Between the site and Lathom House, within the park, stand the private chapel, alms-houses, girls' school, and mistress's house, of which the following description is given by Mr. James Dixon, of Ormskirk, in his "Historical and Descriptive Sketch of Lathom Chapel," &c. He says, "The chapel at Lathom is ancient-looking and very pretty, standing at one angle of the quadrangular group formed by the chapel, almshouses, and girls' school, with mistress's school-house, all beautifully overshadowed by chestnut and oak trees of centuries' growth. The interior of the chapel is very neat, nicely fitted up with benches, and having a very elegant pulpit, made a few years ago, from wood saved from the now demolished Burscough Priory. An eagle, in carved wood, was also replaced in the chapel, whence it is supposed formerly to have been taken, and is now again very properly used as a lectern. The windows in the chapel are of stained glass, the production of the Hon. Mary C. Bootle Wilbraham (now deceased), eldest daughter of the first Lord Skelmersdale, executed many years ago; the subjects are floral devices and armorial bearings of the Skelmersdale family and their alliances."

The plan to the left shows the arrangement of the new building; the schoolroom is 50 ft. by 20 ft., and the class-room 20 ft. by 18 ft., the floor of which, being raised 15 in. above the level of the school floor, and extending into the school about 3 ft., forms a platform for the master's desk, &c. There are two hat and cloak rooms, each 13 ft. by 8 ft. entered from separate open porches, and each having a door opening into the school and class rooms. The materials used in the erection are, externally, red bricks (made on the estate) with a very free use of hard Longridge stone for dressings; the roofs being covered with Welsh green slates. Internally the exposed woodwork is executed in pitch pine varnished; the ceiling of the school is divided into four bays, and that of the class-room into two bays, by carved wrought and moulded principals, exposed, and springing from moulded stone corbels; means for thorough ventilation are provided in the roof. The floors throughout will consist of pitch-pine blocks, in pattern, on a bed of concrete, 6 in. thick. There will be round the school and class rooms an ornamental dado of glazed tiles, 4 ft. 3 in. high. The hat and cloak room will have a pitch-pine dado, 5 ft. 3 in. high, with hat-pegs. All the walls above the dado will be plastered. The windows throughout will be glazed with Hartley's quarry-marked glass. The class-room will be divided from the school by means of Clark's pitch-pine patent revolving shutters. The accommodation is for upwards of 200 children. The work is being executed by the contractor, Mr. Thomas Riding, of Ormskirk, from the plans (approved by the Education Department), and under the superintendence of, the architect, Mr. Thomas Kissack, of Ormskirk and Southport.

## THE NEW TOWN-HALL, VIENNA.

Our readers have been kept well informed as to the large architectural works now in progress in Vienna. Foremost amongst them is the Town-hall, now making rapid progress, of which we have on various occasions spoken, illustrating a portion of it a few years ago. We now give a view of the whole, with sketches of the Banqueting Hall (on the left side), and the chapel. To prevent the necessity for reference, we repeat some of the particulars. The architect, Herr Friedrich Schmidt, now deservedly eminent in Germany, was selected in competition in 1868. His works, we may say, are very numerous. Besides the restoration of St. Stephen's (including the partial rebuilding of the tower), which he brought to its completion, he is the architect of most of the new churches of Vienna. The plans for restoring the castles of Vajda Hunyad in Transylvania, and Karlstein in Bohemia, are also by him.

The Vienna Rathhaus, which was commenced in 1872, forms a parallelogram 505 ft. long and 407 ft. broad, and occupies an area of 205,535 square feet (nearly five acres). The space inclosed by the four façades is divided by two larger and four smaller blocks into seven courts, of which the inner one extends to a length of 260 ft., and a breadth of 115 ft. throughout the entire depth of the interior space, while both to the right and left are placed three courts of various sizes. The style of the building is Gothic, with a leaning towards that development which Gothic architecture presents in Upper Italy. All the blocks have five stories; in the principal façade the two ground-stories are combined into one by an arcade. The lower stories are appropriated to the various offices most used by the public, while the principal floor contains the banqueting and other public halls, with refreshment-rooms, as well as the meeting-halls of the Town Council and the executive. The upper story is occupied by the museum of arms of the city, the archives, &c. The principal staircases are in the centre blocks.

The centre of the building projects from the front by a second row of arcades, and is raised upon a flight of fourteen steps. The tower, 351 ft. high, juts out further from the middle part. Passing through the arcades, a vaulted hall of 112 ft. long and 36 ft. wide is entered. Remarkable for their size are also the banqueting-hall, of an area of 11,645 square feet, and 44 ft. high, with an open loggia along its whole length, and a smaller room in the tower; and the great meeting-hall of the Town Council, of an area of 3,714 square feet, extending through two stories, with galleries on three sides.

All the outside façades are erected in free-stone; those of the courts, from the entresol upwards, in brick with terra-cotta ornaments. All the roofs and ceilings, with the exception of those of the halls and corridors, which are spanned by groined vaulting, are of iron.

In accordance with the views and resolutions of a commission of experts specially appointed for the purpose, the interior decoration of the town-hall is to be carried out in an historical sense. Allegory is to be avoided as much as possible. The decoration has been confided to old and young artists alike, with whose work no special fault can be found. Hans Makart is to paint three frescoes for the ceiling of the banqueting-hall (Reconstruction of Vienna; Science and Arts; Commerce, Traffic, and Trades). At the window-piers will be placed statues of historical personages renowned in the annals of Vienna (for instance, Starhenberg, Solm, &c.), and over them mosaics (portraits of Beethoven, Mozart, van Swieten, Raffaelle, Donner, Grillparzer, &c.). The statues will be the works of the sculptors Weyer, Tilgner, Wagner, and others; the mosaic portraits will be executed after cartoons by Trenkwald, Julius Schmidt, and other artists. The space above the orchestra will be filled with medallion portraits of Raimund, Schubert, Strauss, &c. The ceiling of the hall of representatives will contain a picture of the siege of Vienna by the Turks, by the battle-painter, S. L'Allemand. The council-chamber of the municipality will have a frieze-like decoration in the form of a series of pictures representative of the history of Viennese life (for example, the opening of the Prater at the time of Maria Theresia) by K. Karga and Jul. Berger. The refreshment-room receives a frieze by Professors Laufberger and E. F. Steinle. A life-size portrait of the emperor, by H. v. Angeli, will be placed in the hall of representatives.

## CRICKET PAVILION, PETERSFIELD.

This pavilion, recently completed, has been erected by public subscription in the picturesque locality of Petersfield Heath, for the Petersfield Cricket Club. The building is constructed with split fir-poles, the bark being left on. The whole is carried upon a brick and concrete foundation. A continuous oak sill rests upon the wall at the ground level, into which the uprights forming the superstructure are securely framed. The interior is lined with 1¼-in. framing, the panels being filled in with 1-in. beaded boarding. The roofs are covered with "withy chips" about 1 in. wide, ½ in. thick, and 1 ft. 6 in. long, fixed in the same manner as ordinary thatch; the ridges being capped with straw.

The building was erected by Mr. J. Maxwell, under the superintendence of the architect, Mr. John Luker, of London and Petersfield, at a total cost of 190*l*.

**Crystal Palace School of Gardening.**—Mr. F. A. Fawkes (author of a work on Horticultural Buildings, lately mentioned in our pages), is to give a course of three lectures to the students and the public at the Crystal Palace on November 16th, 23rd, and 30th, at five p.m. The lectures will treat of horticultural buildings, their details of construction, fittings, heating, and so forth.

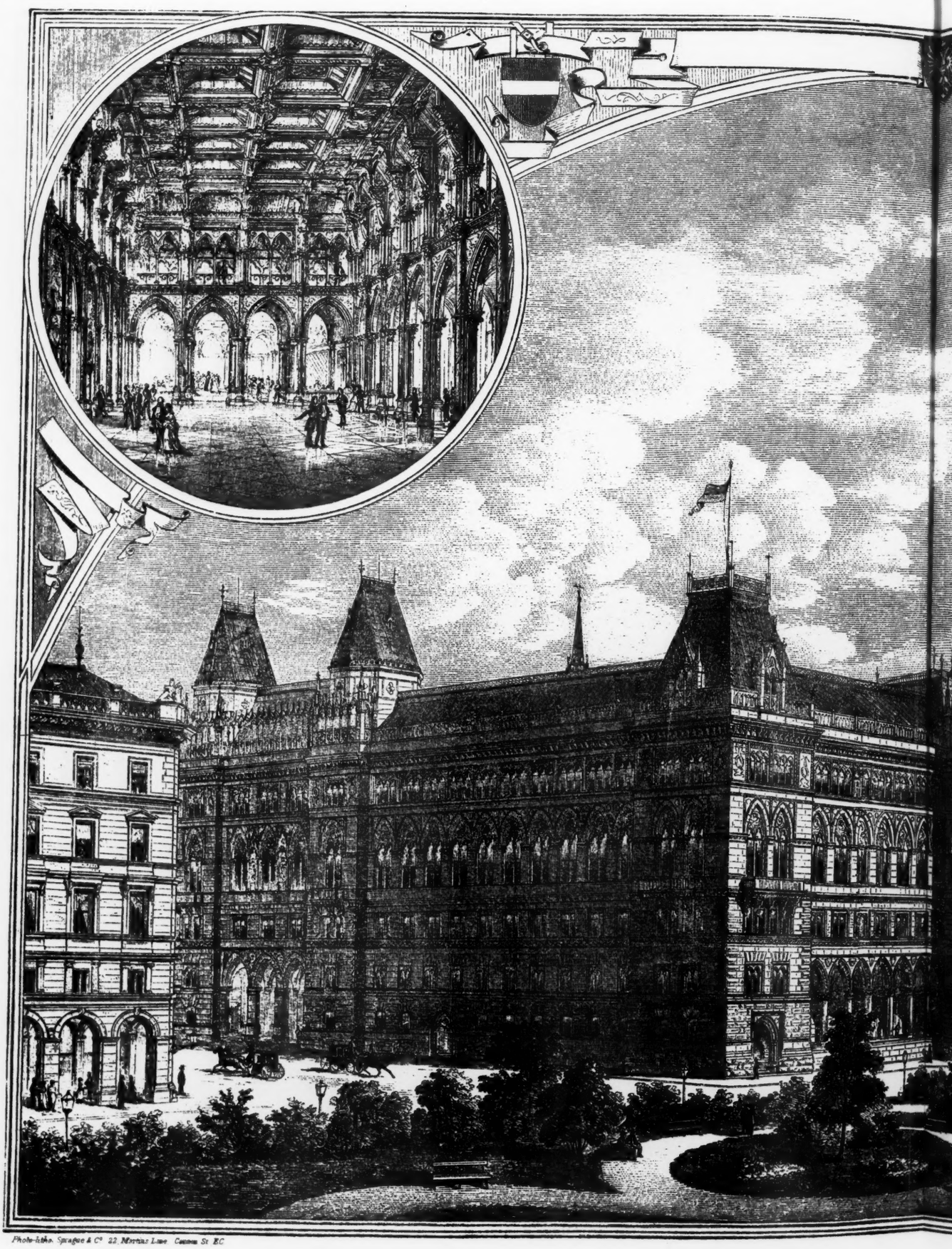
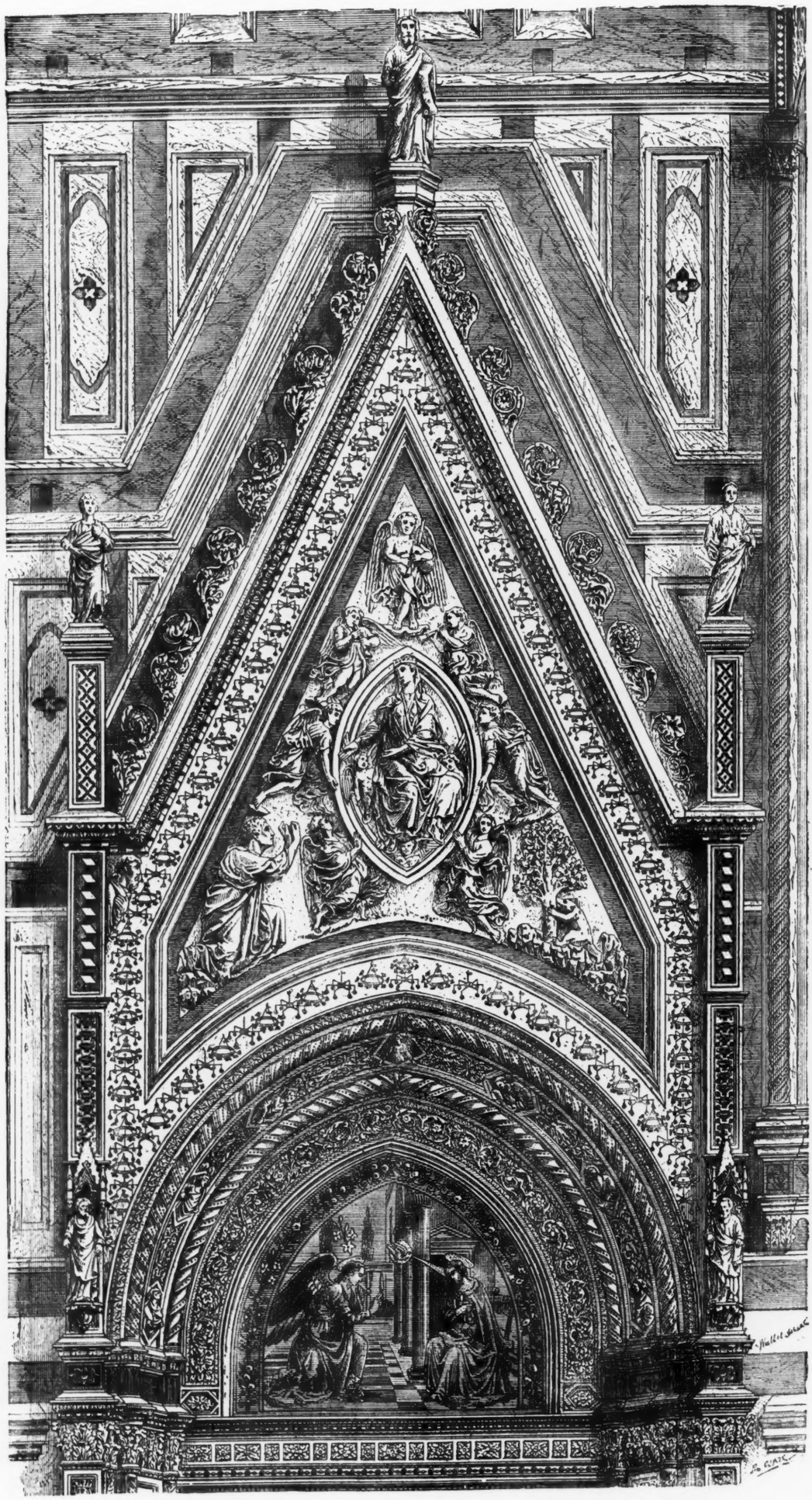


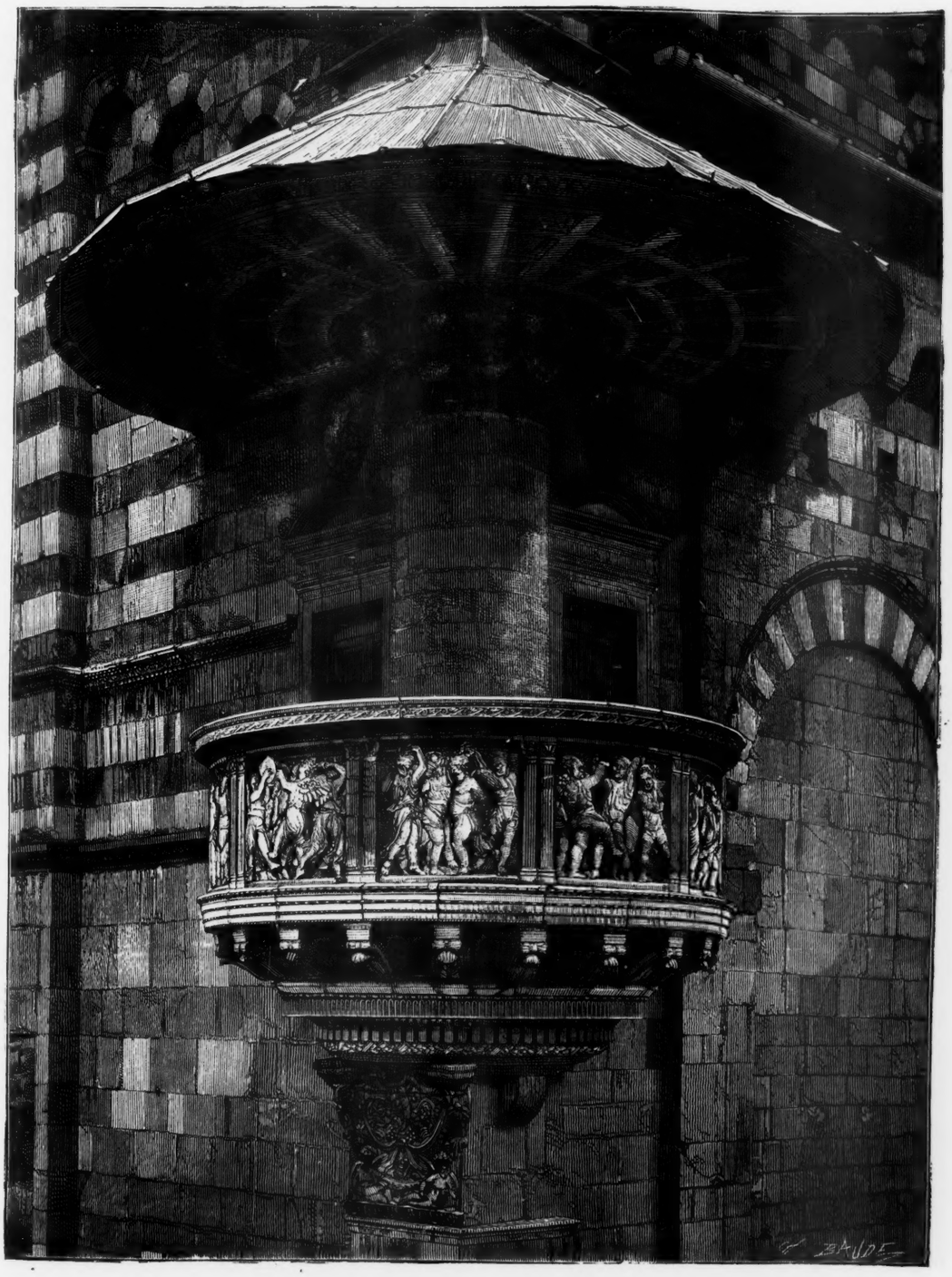
Photo-litho. Sprague & Co. 22, Mitre's Lane, Cannon St. EC.

THE NEW TOWN HALL, VIENNA.—H

IENNA.—Herr Friedrich Schmidt, Architect.



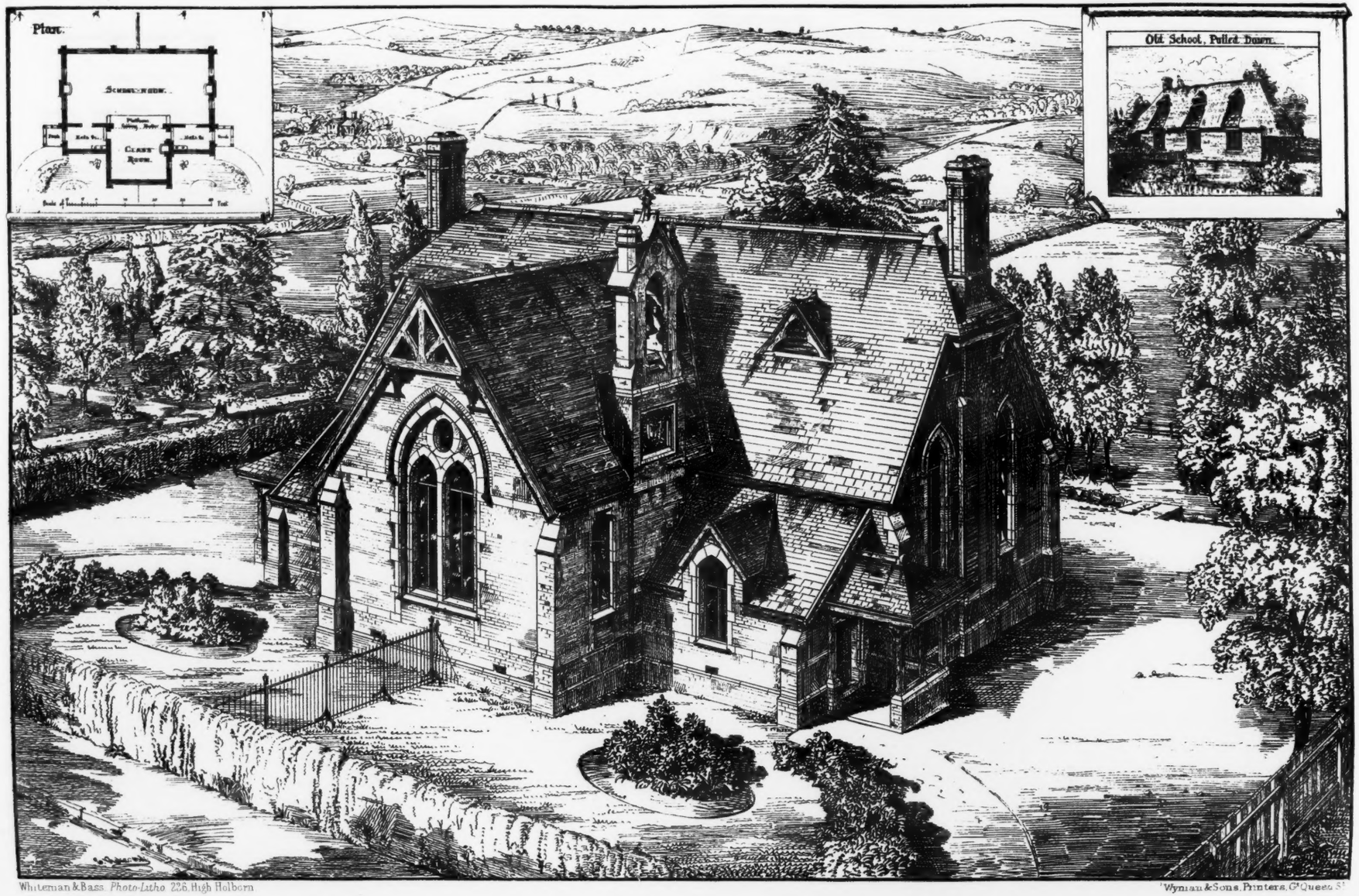
FLORENCE CATHEDRAL: SCULPTURE OVER THE "PORTA DEI SERVI." [See p. 504, *ante*.



EXTERNAL PULPIT AT THE CATHEDRAL OF PRATO, NEAR FLORENCE.

The Work of Donatello and Michele di Bartolommeo.

[See p. 505, *ante*.

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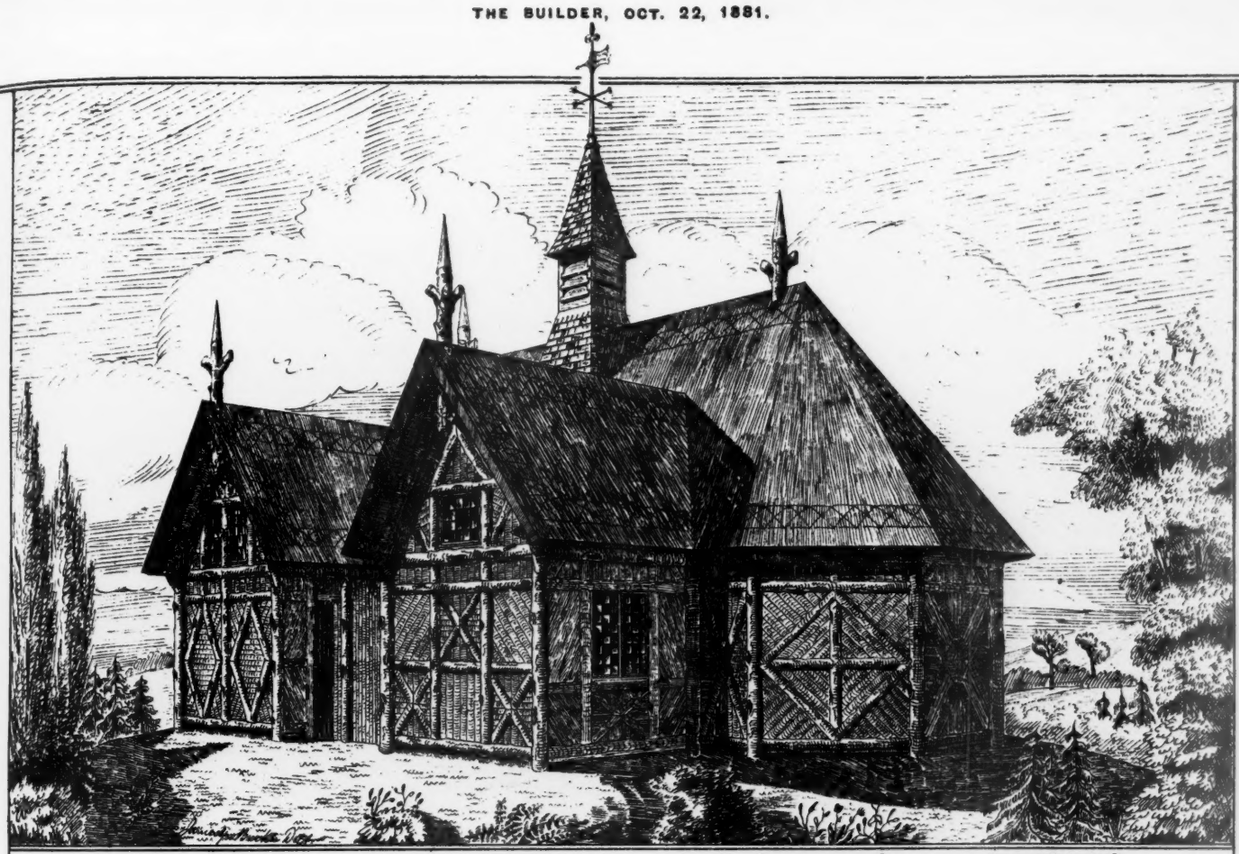
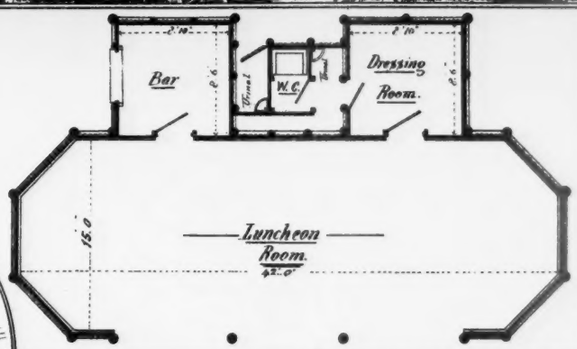
Wyman & Sons, Printers, Gt Queen St

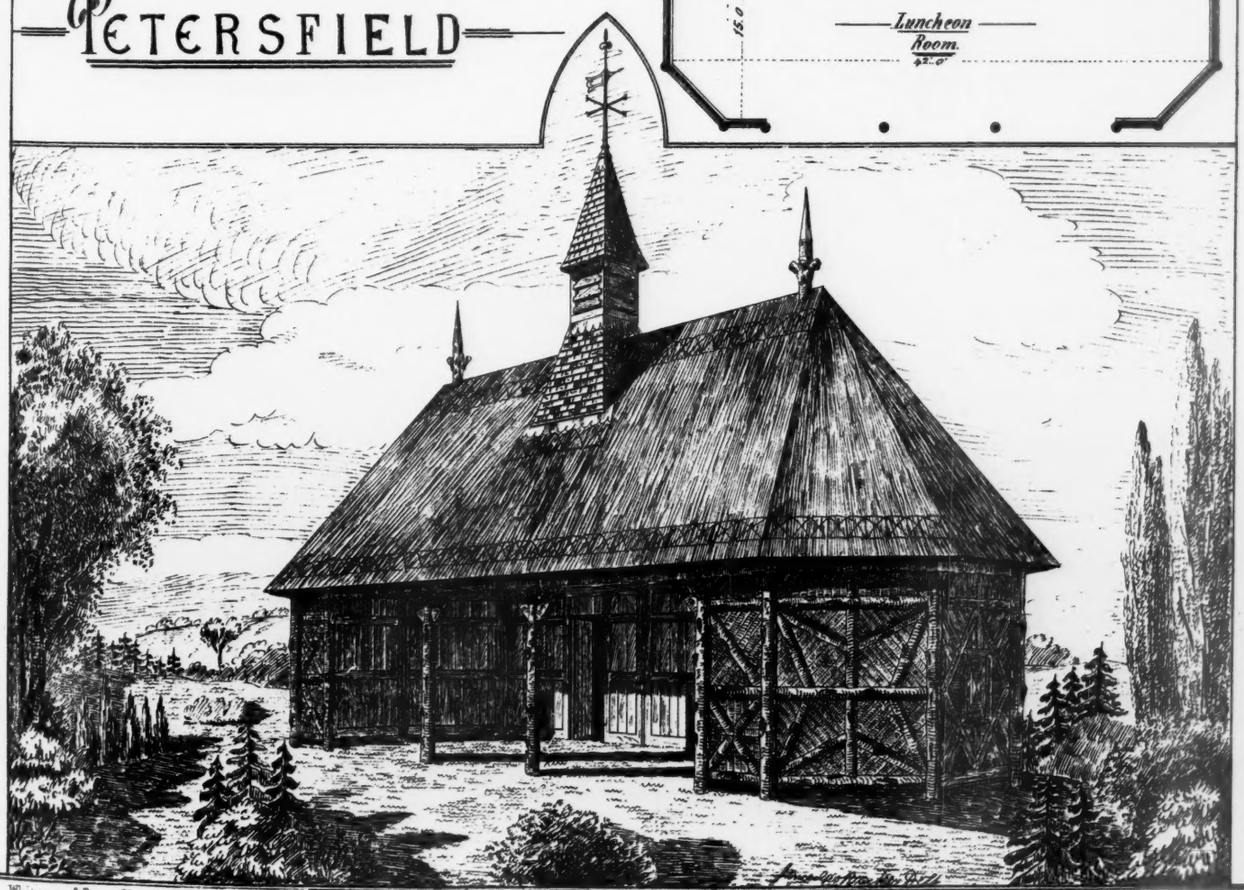
School at Lathom, for The Right Hon. the Earl of Lathom.

Thos Ridgen, Architect, Barnsley & Southport

# CRICKET PAVILION PETERSFIELD





Whiteman & Bass, *Photo-Litho* 236, High Holborn.

Wyman & Sons, Printers, G^t Queen S^t

School at Lathom, for The Right Hon. the Earl of Lathom.

## BUILDING NOTES FROM THE WEST OF ENGLAND.

The building trade in the West of England is, if anything, rather better than it has been. The improvement is nothing remarkable, but prospects look healthier than formerly. Amongst various matters which have been engaging attention may be mentioned the following:—

The foundation-stone of St. Saviour's, Woolcott Park, Bristol, was laid a few days ago. For several years an iron building has been in use, and the one which is to supersede this is in the Early Pointed style. The exterior walls are of Pennant stone, with Bath stone dressings. At the west end and springing from the gable will be a bell-turret, rising 80 ft. from the ground; it will have at its apex a canopied niche, containing a figure of Christ the Good Shepherd. There will be little attempt at ornamentation. The interior will consist of nave, north and south aisles, chancel, organ-chamber, vestries on the north, and a transept on the south side. The width of the nave from wall to wall will be 54 ft., and from the chancel to the western extremity the length will be 93 ft. The height to the apex of roof will be 58 ft. The chancel is to be 38 ft. long by 25 ft. wide, and 52 ft. high. The chancel arch will be 20 ft. wide, and 38 ft. high to its keystone. Dividing the nave from the aisles on each side, six arches, with carved capitals and of bold design, will be erected. The total cost of the work is estimated at 4,839*l.*, and the new church will provide seats for 834 persons. Mr. John Beaven is the architect, and the contract has been taken by Mr. Cowlin.

The council of Bristol some time ago decided to erect a new bridge crossing the Avon from Bedminster, a parish of about 30,000 inhabitants. Mr. Ashmead, the city engineer, has just completed his plans for the new structure. His designs are for a bridge with bow-string or lattice girders, one on each side of the bridge, the roadway being supported by cross girders. The rise of the present bridge would be reduced 1 ft., and the width and strength would be considerably greater. The Corporation have approved of the plans and fixed the width at 40 ft. for the carriage-way, and 7 ft. for the pavements.

On October 13th, an addition to the many fine churches in Bristol was opened—St. Mary's, Tyndall's Park. The building has been carried out in instalments, the foundation stone having been laid as long ago as November, 1870. The church is now complete, with the exception of the tower. It is in the Decorated style of the middle of the fourteenth century, and is built of local sandstone. The chancel is 39 ft. long, 24 ft. wide, and 58 ft. high to the apex of the roof. The east window, of tracery work, measures 25 ft. by 15 ft., and contains five lights. The transepts, which are 21 ft. 6 in. long and 18 ft. wide, project from the chancel, into which they open by arches springing from clustered shafts of serpentine, bearing carved caps. The chancel arch is 22 ft. wide and 35 ft. high, the jambs being shafted with polished red Dartmoor granite. There are also western arches from the transepts to the nave aisles, each 11 ft. wide and 14 ft. in height. The full length of the nave is 84 ft., and it is 26 ft. wide, with four bold arches on each side 22 ft. high and 20 ft. wide, springing from circular shafts with moulded bases and carved caps. The arcades support the clearstory, with a three-light window over the apex of each arch. To the apex of the roof the height of the nave is 64 ft. On each side of the nave are lean-to aisles, 12 ft. in width. The north window is of stained glass by Messrs. Burlison & Grylls, of Newman-street, London, the subject being Our Lord in his Subjection to his Parents. Some of the internal carvings, by Mr. E. Sheppard (Bristol) from his own designs, are very effective. The cost of the third instalment of the work has been 3,700*l.*, and about 2,000*l.* are required for the tower. The cost of the two first instalments was large, and 1,000*l.* were paid for the site. Mr. J. Piers St. Aubyn was the architect for the work, and Messrs. Stephens & Bastow were the contractors for the concluding portion.

Rather a novel claim, interesting to builders, has occupied the attention of the Gloucester county magistrates. The Gloucester Highway Board charged Mr. Albert Estcourt, builder and contractor, 41*l.* 13*s.* for extraording traffic on the roads. The builder was carrying out a contract of 10,000*l.* for the erection of additional buildings at the Barnwood House Asylum, and it was alleged that the extra wear of the roads had resulted from the hauling of his building materials. Other builders had also caused extra wear, and it was understood they would, if the Board gained their point in this case, have claims sent to them. It was stated that 313 extra tons of stone had to be used in road repairs in consequence of the extra traffic. It was contended that Mr. Estcourt's traffic was not such as was intended by the Legislature to be termed "extraordinary," and the magistrates dismissed the claim of the Highway Board.

A new Jews' synagogue has been opened at Uplands, Stroud.

The engineers of the Great Western Railway have been examining the ground for a new line from the Quaker's-yard Junction, on the western side of the Taff Valley, up to Merthyr. The chief object is said to be to get access to some extensive collieries.

A new coffee hotel, erected at a cost of 3,300*l.*, has been opened by the Bishop of Bath and Wells, at Taunton. The building is for the Taunton Coffee Tavern Company, Limited. Mr. C. H. Samson was the architect, and Mr. Templeman the builder.

As stated in the *Builder* a month ago, efforts are being made to provide a new pier for Weston-super-Mare. Two plans have been obtained since then, and each proposes a pier a mile and a quarter in length, this great length being necessary to obtain a depth of 7 ft. of water at low tides. The plan of Messrs. P. Munro & Son, Bristol, proposes an octagonal head and 129 spans of 59 ft. each, measuring from centre to centre of the columns. All the girders in the elevation of the pier would be continuously connected, and would be furnished at each end with a pair of vertical angle-irons, and bolted together with six bolts, a piece of felt soaked in tar being inserted in the joint. The abutments and wing-walls would be of local stone, set in cement. The pier-head would be supported on piles. The cost Messrs. Munro put at 40,000*l.*, exclusive of expenses of promotion. Mr. Scoones (Bristol), who supplied the second plan, estimated the cost of a pier built in the ordinary way at 60,000*l.* or 70,000*l.*, but the special method of construction he advocated he estimated at 38,225*l.*; this amount including the pier, tramway along it, landing-stage, refreshment-room, bazaar, and band-stand. The engineer does not propose one continuous structure, but says additional safety would be obtained by dividing the length into eight spans, each of which would be stronger than the rest of the pier. The materials would be wrought iron, and the structure on the trussed principle successfully adopted in America. The matter has been referred to a committee to see if there are any legal difficulties in the way of a new pier.

A new church institute has been opened in Weston-super-mare, the total cost of which, with site and furnishing, was 2,300*l.*

The Masonic Hall is another new building just completed in the same town. Messrs. Hans, Price, & Wooler were the architects, and Mr. S. T. Harvey was the builder.

A Methodist Free Church schoolroom has been commenced at St. George's, Gloucestershire. It is of Pennant stone, with freestone dressings. It matches the chapel it adjoins, and the cost will be about 1,000*l.*

The foundation-stone of a mission-room in the Dings, Bristol, has been laid. The cost will be 650*l.*

## NEW HIGH SCHOOL FOR BOYS AT OXFORD.

The New High School for Boys, situate in New Inn Hall-street and George-street, Oxford, was formally opened on the 15th ult. (as already briefly mentioned by us). We quote from the *Oxford Journal* some particulars of the building. The site, buildings, and other property of the school are vested in the Corporation of the city, in trust for the purposes of the school; but if the school should ever cease to be used as such, then the buildings and site revert to the Corporation, to be held by them for municipal purposes. The school is to be open,—without regard to social position or religious opinion,—to all boys residing in Oxford and the neighbourhood who shall have attained the age of eight years, are of good character, able to read simple narrative, and write text hand, and show some knowledge of the first four rules of arithmetic. There are reserved fifty Free Scholarships, which are tenable for three years, and are to be filled up as the funds at the disposal of the Governors allow. Thirty of these Free Scholarships are to be held by boys under twelve years coming from the elementary schools of the city. The remaining twenty are to be held by boys already in the school, of ages set forth in the scheme. The Scholarships are to be competed for on examinations, for which due provisions are made in the scheme. The site, which was provided by the Corporation free of charge, lies between New Inn Hall-street, George-street, and Bulwark's-alley, and is bounded on the south by the old city wall and bastion. The chief access for the boys is from New Inn Hall-street, whence they at once reach the playground. The chief face of the building fronts George-street. The Governing Body, before determining on an architect, invited three gentlemen to send in designs, and eventually entrusted the designing of the buildings to Mr. T. G. Jackson, M.A., of Wadham College, Oxford. Keeping in view the limited funds at present at their disposal, the Governing Body resolved to build at first only the principal school-room and four class-rooms; and as soon as the specifications and quantities for this portion of the proposed buildings were complete, they invited tenders from thirteen builders in Oxford and elsewhere, and accepted that of Mr. C. Claridge, of Banbury, amounting to 7,480*l.*, which was the lowest. The building has a frontage to George-street of about 120 ft., and is recessed to form a forecourt, behind which is the principal block, occupying the whole width of the frontage, and containing four class-rooms, below which is a hall about 84 ft. by 28 ft., and a projecting building in front, containing the principal staircase and entrance porch, with a Decorated gable and lanterns above. There is a second staircase at the west end of the hall, with an entrance from the south. For the present this building will not be carried beyond this point, but according to the plan, a long wing containing class-rooms and corridors will ultimately extend westwards, behind, and parallel to the houses in George-street. By this arrangement of the building, a large extent of ground will be left available for a playground between the school buildings and the old city wall, with an entrance from New Inn Hall-street and another from Bulwark's-alley. The plan, when completed, will include a house for the head master, and possibly new Science and Art Schools may be built on a part of the site, for the use both of the High School and of the townspeople generally. The great hall is panelled with wood to a considerable height, and the doorcases are surmounted by the city arms. A large fireplace and chimneypiece form the principal feature of one end, designed more for the appearance of comfort that an open fire gives than for actual necessity, for the whole building is fitted with hot-water pipes, and artificially ventilated. The city arms also appear sculptured on the George-street front, with the mottoes of the town and the University, "*Fortis et Veritas*" and "*Dominus Illuminatio Mea.*" In the gable above is a large enamelled clock-face, and the whole is surmounted by a lantern containing the clock-weights and the bell.

Messrs. Farmer & Brindley have executed the carving; Messrs. Haden, of Trowbridge, supplied the heating and ventilating apparatus; and Mr. Rowell, of Oxford, the clock.

## PROPOSED TREATMENT OF LONDON SEWAGE.

At the meeting of the Metropolitan Board of Works, on the 14th inst., the Works and General Purposes Committee presented a report as to a letter from Mr. C. Deavin, regarding some suggestions made by him for dealing with the sewage of the metropolis, so as to minimise as far as possible the pollution of the Thames. Mr. Deavin proposes that in the neighbourhood of the main drainage outfalls a series of reservoirs should be constructed, sufficiently large to receive, say, a daily discharge of the sewage. On the banks of the reservoirs should be placed at certain intervals lime-kilns for burning a sufficient quantity of lime to disinfect the sewage. When the reservoirs were fully charged with sewage the lime should be shot into them, and "by some mechanical contrivance propelled by steam," the lime and the sewage could be mixed together, and when the mixture had settled, the watery portion could be passed into the Thames, while the sediment or sludge at the bottom of the reservoirs might be lifted by machinery into

tanks constructed of iron placed on the top of the kilns, the fire beneath being utilised for drying the sludge, which would then be reduced to a portable state and utilised for fertilising purposes.

The Works Committee recommended that Mr. Deavin be informed that the Board do not consider that past experience would justify the adoption of the process which Mr. Deavin suggests.

The report was adopted, after some discussion, in the course of which Mr. Richardson said that, sooner or later, the Board would have to do something in regard to this question. He should have liked to have Mr. Deavin's proposal referred to the chemist for consideration.

The Works Committee, we believe, acted on the advice of the Engineer of the Board, Sir Joseph Bazalgette, who pointed out that the lime process of precipitation was no new thing, having been in operation, with more or less success, for the last thirty or forty years, but that in every instance it had been attended with great cost, and the residue was not of the value supposed by Mr. Deavin.

## NEW SCHOOL BUILDINGS AND MISSION ROOM IN KENNINGTON.

Two large blocks of new buildings are at present in course of erection in Camberwell New-road and James-street, Kennington, in connexion with the Church of St. John the Divine, Vassall-road, to which there are already attached middle-class and parochial schools, together with a spacious mission chapel, all of which have, from time to time, been erected at a considerable outlay, in addition to the handsome church itself (from designs by Mr. G. E. Street), which, although the tower and spire have not yet been built, has already cost about 20,000*l*. The new buildings in question consist of an enlargement of the existing schools in Camberwell New-road to about double their present dimensions, by the erection of a block containing two additional school-rooms, 40 ft. by 25 ft. each. The other block, having its main frontage to James-street, and in immediate contiguity to the school buildings just referred to, consists of an entirely new and distinct building, containing an infants' school and class-rooms on the ground-floor, and a spacious mission-room on the floor above, the building likewise including a convenient residence for the caretaker in charge of the several schools. The building, which is faced with stock brick and red brick dressings, has an elevation to James-street upwards of 70 ft. in length, and is in the Gothic style of architecture, surmounted by three lofty gables, two of which are 45 ft. in height, the gable at the south end of the block, which contains the caretaker's residence, rising to a height of 55 ft. It has a high-pitched roof, in which there are three dormers. The mission room is 25 ft. in height, and is lighted by two three-light windows in the James-street frontage, and a large four-light window at the north end, the lower portion of the three dormers above-named also contributing to light the room, whilst the upper portion serves ventilating purposes.

Mr. F. W. Hunt, of Upper Baker-street, is the architect; and Mr. Tyerman, of Walworth-road, the contractor. Mr. A. Cox is clerk of the works, and Mr. G. S. Double the foreman. The cost of the buildings will be about 6,000*l*., which it is stated will be defrayed by the Rev. C. E. Brooke, the vicar of St. John's, at whose expense, mainly, the church and other buildings in connexion with it have been erected.

## BIRMINGHAM.

One of the most recent additions to the architectural features of this town, the new Central Arcade, extending from Corporation-street to Cannon-street, is now completed. It has been erected for the proprietor under the superintendence of Mr. W. H. Ward, architect, the style adopted being a free treatment of the Renaissance. The whole of the interior is faced with stone, with the introduction between the shops of granite pillars; and springing from these at the top of the Arcade are some light iron principals, carrying a roof, which is filled with stained glass. There is a liberal decoration in gold and colour on the flutings and frieze. The shops are convenient, and the offices above have easy access from the street. Underneath the shops, with entrances both from Corporation-street and Cannon-street, is the new Central Restaurant and Grill-room, which is lighted by means of a glass and iron roof, which forms the floor of the Arcade. There is a double row of gas-pendants on each side of the avenue, and each pendant is furnished with an opal lamp. In addition to the ordinary lights in the Arcade, there are clusters of lights at each entrance.

The contract for the erection of the building has been carried out by Mr. J. Garlick. The whole of the glasswork was erected by Messrs. J. & O. C. Hawkes, of Bromsgrove-street; and the ornamental wrought-iron gates were manufactured by Mr. T. Brawn, of Clement-street.

## SLATE QUARRYING.

At the last meeting of the Liverpool Engineering Society, at the Royal Institution, Colquitt-street, a paper on "Slate Quarrying" was read by Mr. C. H. Darbishire, Assoc.-M. Inst. C.E. It dealt chiefly with slate quarrying as carried on in the Nantle Valley, and the several beds or veins of slate that are worked therein. The author commenced by alluding to the rock as having been formed of great deposits of mud in water, composed chiefly of silica and alumina, which have been subjected to immense pressure and volcanic convulsion. The split of the slate is attributed in a great measure to the effects of the great pressure. The paper further described the several means of opening quarries whether on the hill sides or on the flat, and alluded to the different lifting apparatuses in common use, advocating inclines instead of the old-fashioned guide-ropes and hauling-chain. Attention was called to the system of bargains, under which practically all roofing slates are made, as well as the duties undertaken by the rock-men and quarry-men respectively, and their tools. The ordinary sawing machinery was described, as well as the dressing-machines in vogue, preference being given to the one invented by the late Mr. Greaves. The explosives mentioned were powder, nitro-glycerine, dynamite, and gun-cotton, all being more or less employed, with the exception of nitro-glycerine, the use of which has now been almost entirely abandoned. In pure slate the common black powder only is burned. The author concluded by pointing out that a quarry venture is not necessarily a success because there happens to be some good splitting slate found therein, but thought that if sufficient good rock is found few ventures are so safe or so lasting.

## THE EAST-END BRIDGE PROJECT.

Some of the ward associations interested in the East End are taking steps with the view of again bringing the subject of a new bridge east of London Bridge before the public authorities, and last week a deputation from the Aldgate Ward Association discussed the matter at a meeting of the Portsoken Ward Association. It was urged that, as the Inner Circle Railway was now in a fair way of being completed, it was time that the East End of London should be benefited by the erection of an eastern bridge. Mr. Lefevre, C.E., who formed one of the deputation, said he appeared there as a member of his association, and not as an engineer. In supporting the project, however, he made some remarks of an engineering character, expressing himself in favour of a low-level bridge, which he asserted could be swung round by means of electricity in about half a minute. In the discussion which followed, the necessity for the construction of the bridge was strongly urged, and a resolution was adopted to the effect that it was desirable that a bridge should be erected as quickly as possible east of London Bridge.

**The Meetings of the Institution of Civil Engineers** will be resumed on the 8th day of November. There will be twenty-six meetings during the ensuing session, and these will be held weekly until the end of May. The Institution is now in telephonic communication with the Exchange System of the United Telephone Company, and its registered telegraphic address is "Institution, London." There has lately been forwarded to the members of all classes the sixty-sixth volume of the "Minutes of Proceedings," being the fourth, and concluding, part for the present year, as well as a Subject-matter Index to the whole of the publications of the Institution, from 1837 to the end of the session 1878-79.

## THE PROSPECTIVE UTILISATION OF GAS.

In view of the introduction of the electric light for illuminating purposes there appear strong reasons for believing that gas will at no distant day be utilised for several other purposes besides that of lighting, which, however, it may be expected long to retain. At the half-yearly meeting of the London Gas Company, held last week, the Chairman observed that in spite of the electric light the company had, in the half-year under review, had an increase at the rate of 3 per cent., whilst, in the quarter just expired the increase had been 4½ per cent., which seemed to show that the electric light was greatly beneficial. The directors, he remarked, found that the use of gas for engines and cooking purposes was greatly increasing. Up to Lady Day, 1880, they were supplying twenty-five engines, but at the present time the number was between fifty and sixty. At the date named they had also forty cooking-stoves heated by their gas, whilst the number was now fully 2,000. Altogether they had some 3,000 machines of different sorts running in their district, independent of lighting, and the number was increasing almost daily. He added that they had received that day an application from one of the electric light companies for the supply of an eighty-light meter. He did not know what they were going to do with it, but this fact demonstrated that even the electric light companies could not do without the use of gas.

## THE ST. GEORGE THE MARTYR BATHS AND WASHHOUSES.

There appears to be a probability of the remaining wing of old St. Thomas's Hospital being converted into baths and washhouses for the parish of St. George the Martyr, Southwark. Several years ago the Baths and Washhouses Act was adopted by the parish, and commissioners under the Act were appointed, but hitherto they have not been able to acquire a site, although several have from time to time been named, including a portion of the sites of the old Queen's Bench and Horsemonger-lane Gaol respectively. It is now, however, stated that the owners of the old hospital buildings still standing are willing to dispose of them with the view of their undergoing reconstruction for bath and washhouse purposes, and that negotiations are now going forward between the Commissioners and the owners of the disused hospital, which are likely to result in the purchase of the buildings by the Vestry, and their immediate conversion into public baths.

## OBITUARY.

*Sig. Raphael Monti, the Sculptor*, died in London on Sunday last, aged sixty-three. A native of Milan, he studied sculpture under his father, Gaetano Monti, and at an early age won the Gold Medal of the Imperial Academy in that city by a group of "Alexander Taming Bucephalus." His next considerable work, "Ajax defending the body of Patroclus," was exhibited before he was grown up. Between 1838 and 1842 he resided at Vienna, and between 1842 and 1847 was occupied with several groups designed to add to the attractions of Milan. In the last-mentioned year he came to England, where his "veiled statue," executed at the instance of the Duke of Devonshire, elicited high praise. Returning soon afterwards to Milan, he gave in his adherence to the popular party, and in 1848, as one of the chiefs of the National Guard, was sent on a mission to the camp of Charles Albert. The war over, he again came to England, and from that time devoted himself to his art. His decease is much lamented by his friends and pupils.

**St. Leonard's-on-Sea.**—With reference to the building here mentioned last week (p. 497, *ante*) as "A New Hospital for Poor Children," we are informed by the architects, Messrs. Fowler & Hill, that its right designation is the Convalescent Home for Poor Children. The institution is not a new one, having been in existence some years, and was established to afford good air and nourishment to convalescent children from London and other large towns, who have been suffering from non-infectious maladies.

## PROJECT FOR A SECOND THAMES TUNNEL.

At the meeting of the Metropolitan Board of Works on the 14th inst., a letter was read from the Limehouse District Board of Works submitting for the consideration of the Board a plan (suggested by the Surveyor of the Limehouse District) of a proposed subway communication between the north and south sides of the river eastward of London Bridge. The proposed subway would form a communication between the Commercial-road East and Lower-road, Rotherhithe. The subway is proposed to be constructed as a double tunnel, each passage sufficient to accommodate one line of vehicles, with frequent communication between the passages, which, it is suggested, should be lined with white glazed bricks, and lighted by the electric light. There would be two shafts near the river, one on each side, for the ascent and descent of foot-passengers. On account of the difference of level on the north side, it is proposed to approach the tunnel "by two elliptic spirals of a diameter of 550 ft. and 480 ft. respectively." The length of the proposed subway on the south side of the river would be 1,317 yards; under the river, 392 yards; and on the north side, 1,802 yards,—making a total of nearly two miles. The gradients of the subway would vary from 1 in 90 to 1 in 50.

The letter was referred to the Works Committee for consideration and report.

## THE ANGLO-AMERICAN ELECTRIC LIGHT COMPANY'S OFFICES.

Within the last few days the Anglo-American Electric Light Company have opened the new office buildings which have just been erected for them on the east side of Belvedere-road, immediately in front of the company's works, and close to where the Charing-cross section of the South-Eastern Railway crosses over that thoroughfare. The building has a prominent frontage to Belvedere-road containing three floors and a basement, and is about 80 ft. in length. The materials of the building are white and red brick, with Portland cement dressings, and in that material, between the second and third floors, is the following inscription:—"The Anglo-American Brush Electric Light Corporation, Limited, Victoria Works." The general offices of the company are on the ground-floor, the manager's and engineer's offices being on the floor immediately above. The board-room is also on this floor, and is the principal apartment in the building. Its dimensions are 30 ft. by 18 ft., and it is the only room in the building which will be heated by the ordinary fire-stove, all the other apartments being intended to be heated by hot-air pipes. The offices will be illuminated throughout by the electric light.

Mr. J. Tillott, of Basinghall-street, is the architect of the building, and Mr. W. Brass, of Old-street, is the contractor, Mr. Weston being clerk of the works.

## ASPHALTE AS A DAMP PREVENTER.

An interesting example of the application of Claridge's Asphalte to keep down damp is to be seen in South Audley-street, near Chesterfield-gardens, where the erection of a large house, from the designs of Messrs. Crickmay & Sons, has just now been commenced by Messrs. McLachlan & Sons. The soil in the immediate neighbourhood is affected by land springs, and in this particular case, moreover, the basement is taken down much lower than adjoining basements, so that the water-course was cut and made itself evident in various parts. Extra precautions were, therefore, necessary to secure dryness, and these have been taken. The whole site of the mansion is covered with Pyrimont Seyssel asphalte, of fine quality, ½ in. in thickness, carefully laid by the company's workmen on a bed of cement concrete. The foundation walls are built on the asphalte. The footings of the walls are covered on the outside, and the outside face of walls is covered up to ground level. The building may be said, as to foundations and road level, to be built in a huge cistern of brickwork, having a ½ in. floor of asphalte all over it, and under footings, carried up the two sides and two ends externally with a like thickness of asphalte; in all to the extent of about 7,500 ft. super. Later on the building will have a flat roof of tile arches, covered with asphalte.

Mr. Farrell, on the part of the company, has just now issued a little book, entitled "On the Uses and Fireproof Properties of Claridge's Patent Asphalte," which gives a list of the purposes to which it may be advantageously applied, and describes, with diagrams, the modes of application. We find quoted in it favourable opinions of the material expressed by ourselves more than a dozen years ago, and more recent experience has in no degree changed these opinions. Care should, of course, be taken to ensure the use of the right material.

## DEMOLITION OF ILLEGALLY-BUILT HOUSES.

For some time past a dispute has been going on between the Camberwell Vestry and Mr. Nunn, the Vestry's complaint being that Mr. Nunn was contravening the provisions of the Metropolitan Building Act by erecting a number of houses in Choumert-road, Peckham, beyond the authorised building line. Mr. Nunn was summoned by the surveyor before Mr. Ellison, at the Lambeth police-court, when, on the case being heard, the magistrate ordered the terms of the Building Act to be complied with, and in the event of the order not being obeyed, he authorised the Vestry to demolish the houses. Mr. Nunn not having conformed to the magistrate's decision, the Vestry have taken the matter into their own hands, and at last week's meeting the General Purposes Committee reported that the surveyor had carried out the order of Mr. Ellison by having the houses demolished. Mr. Sugden observed that they were all pleased at the fact that the surveyor had vindicated the law, and that determination had been shown that Mr. Nunn should not set them at defiance; but he thought that the Vestry should show sympathy with one of the tenants on the estate, who had greatly suffered in consequence of the course which the Vestry had been compelled to take. Mr. Middlemass, in reply, said the tenant's action was against Mr. Nunn and not against the Vestry.

## PATENT RECORD.*

### APPLICATIONS FOR LETTERS PATENT.

4,219. J. Hill, London. Securing knobs to spindles for door-locks, latches, &c. Sept. 30, 1881.

4,226. C. Hook, Bridgwater. Window-sashes and frames. Sept. 30, 1881.

4,257. J. Wadsworth, Manchester. Gas-heating stoves, &c. Oct. 1, 1881.

4,270. E. A. Brydges, Berlin. Pneumatic method of constructing foundations for the piers of bridges and other structures. (Com. by G. Gregersen, Buda-Pest, Hungary.) Oct. 1, 1881.

4,297. B. D. Healey, Brighouse. Asphalte apparatus. (Com. Spec.) Oct. 4, 1881.

4,335. W. R. Kinipple, Westminster. Construction of harbours, breakwaters, docks, &c. Oct. 5, 1881.

4,342. T. Fletcher, Warrington. Gas stoves for heating purposes. Oct. 6, 1881.

### NOTICES TO PROCEED

have been given by the following applicants, on the dates named.

*Oct.* 4, 1881.

2,351. T. A. Brocklebank, London. Putting together steps or stairs, flooring, &c. May 28, 1881.

2,453. J. Herd, Birmingham. Roadways, pavements, &c. June 3, 1881.

3,863. G. Jobson, Derby. Ornamental tiles, &c. Sept. 6, 1881.

*Oct.* 7, 1881.

2,628. W. W. Beaumont, Camberwell, and J. Wellman, Poole. Apparatus for dressing and cutting stone, &c. June 16, 1881.

3,629. C. Drake, Battersea. Baths. Aug. 20, 1881.

3,911. J. Wetter, New Wandsworth. Reflectors (Com. by W. Wheeler, Massachussets, U.S.A.) Sept. 9, 1881.

### ABRIDGMENTS OF SPECIFICATIONS

*Published during the Week ending October* 8, 1881.

529. B. C. D. Greenhill, Puriton. Machinery for pressing with perforations bricks, tiles, &c.

A cube of clay is pressed into a die by a lever or wheel which acts upon an eccentric, and the same motion simultaneously brings down a series of plungers which perforate the brick. The reverse motion liberates the perforated brick. Feb. 8, 1881. Price 4d.

778. E. O. Mundy, Stratford. Valves or apparatus for preventing waste of water.

A hollow ball of indiarubber works in a guide covered with perforated metal. The lower valve is kept in position by a guide tube working in a bridge piece in the seating. The hollow piston-rod above the ball carries two metal hemispheres, the upper one being fixed and the lower one loose to press into the ball and make it of a cup shape. There is a small hole into the hollow piston-rod between the two hemispheres, and when the rod is raised, water flows through the hole in the ball and fills it. When the rod is depressed, the hole is closed and the water flows out of the ball through the lower guide tube. Feb. 24, 1881. Price 6d.

822. B. C. Cross, Dewsbury. Socket-pipes for sewers and drains.

To keep the lower edge of the pipes for sewers and drains in one and the same straight line when laid, the under side of the pipe is equal in thickness to the combined thicknesses of the other side and the socket. Feb. 26. 1881. Price 4d.

861. W. Morgan-Brown, London. Devices for hanging doors and blinds.

To allow sliding doors which are hung on pivoted levers to remain in the position in which they are placed, without a tendency to return to the position in which the levers are in equilibrium, the truss-formed levers are attached together centrally, and one is connected to the door-post and attached to a guide on the door, while the other is connected to the door and guided on the post. A kind of parallel-motion device is also applied to guide the latter lever in its movement. (Com. by E. Prescott, Rockingham, U.S.A.) March 1, 1881. Price 6d.

875. H. Faija, Westminster. Treatment of concrete and cement for building, &c.

After the concrete or cement is mixed or ganged in the required form, to enable it to be speedily used, it is placed in a chamber into which steam is admitted. It is then subjected to the action of a warm bath of sea-water, or a warm silicate of soda or potash bath. In order to accelerate the induration, concrete or cement may be mixed with alkali or silica or salt in solution. March 1, 1881. Price 4d.

906. G. L. Sutherland, Manchester. Stoves and fireplaces.

The sides and back of the stove have air-warming chambers, which are provided with horizontal partitions, to cause the air to take a circuitous course when flowing through. The two side-chambers are divided into compartments, and these compartments and the back chamber are connected together by arched pipes, round which the heated gases from the fire flow. These gases are caused to flow through a chamber containing water, to deposit the soot therein. March 3, 1881. Price 6d.

912. R. Adam, Southwark. Window-sashes fan-lights, &c.

To make vertically-sliding windows revolve on centres to facilitate cleaning and repairing, the beads between which the sashes slide are movable, and the sashes are hung on pivots which bear in supports which slide between the beads. March 3, 1881. Price 6d.

926. G. Maw and A. Maw, Broseley. Decorating bricks, tiles, pottery, &c.

A mould is made by casting in plaster, metal, &c., of the decoration to be used, and with this mould is pressed the surface of the article either with plastic clay or by the dry or dust process (Prosser's system). The article is then fired and decorated by coloured glazes or enamel. "Mosaic tiles" are produced by moulds, into the depressions of which clays of various colours in the dust state are introduced, backed up with the necessary thickness of dust and submitted to pressure, which consolidates the separate tesseræ with the backing, and forms the tile, which is then fired. March 4, 1881. Price 2d.

928. E. E. Lucas, London. Ball-valves.

This valve consists of a circular recessed chamber with a seat at the bottom, in which is a mushroom-valve. The ball lever is jointed at the bottom of the valve and the end turned over so as to resemble a cam. As the water in the cistern is lowered this cam raises the valve. (*Pro. Pro.*) March 4, 1881. Price 2d.

* Compiled by Hart & Co., patent agents, 28, New Bridge-street, E.C.

## THE BEER MAUSOLEUM.

With reference to the correspondence in our issue of October 8th,* we have received another letter from M. Bouwens, of Paris, in which he objects to Mr. J. O. Scott's assertion that the monument is a joint work, and desires to submit the question to a jury of distinguished artists. We must, however, decline interfering further in the matter.

**Ladies' Sanitary Association.**—A second series of nine lectures on "Domestic Sanitation" will be delivered by Dr. Richardson, F.R.S., in the lower hall, Exeter Hall, Strand, during October, November, and December. In this course of lectures the structure and functions of the nervous system of man will be presented. The physical and mental training of the young will be considered in this division. The lectures will be illustrated by the oxy-hydrogen lantern. The first lecture will be delivered on Saturday, October 22nd, at five p.m., and will be continued on the following Saturdays until December 17th. Six prizes will be awarded to the most proficient students.

* See p. 466, *ante*.

## DALWOOD CHURCH.

The parish church, a building of the fifteenth century, consisting of west tower, nave, north aisle, chancel, and north chantry chapel, has just been reopened. The gallery under the tower has been removed and the tower arch opened out. The north arcade wall of the nave has been rebuilt, and all the old stones re-used; new roofs covered with Portmadoc slates (the ridges of red tiles) have been put to the nave and chancel, with deal wagon-headed ceilings, the chancel ceiling being the richest. Moulded ribs divide them into panels, with carved oak bosses at intersections of the ribs. A few of the old bosses have been re-used in the nave. The north aisle, roof, and ceiling have been repaired. The modern pews have been abolished, and the body of the church fitted with stained deal open benches. It will now accommodate 200 persons. To the chancel English oak stalls have been put. The Jacobean oak pulpit has been cleaned of paint and re-set on a new base of Ham Hill stone. The new altar-rail is of oak, in wrought-iron metal standards. The chancel pavement is of Godwin's encaustic tiles, specially made for the architect. The chancel arch, which had been cut away, has now been replaced by a new arch of Beer stone (the material employed in the old part of the church). The walls have been re-plastered and cleaned, and all the doors and windows repaired. The glazing is of cathedral rolled glass in various tints, and clear white glass in ornamental lead quarries. To heat the building Porritt's Underground Stove has been employed. About 1,000*l.* have been expended on the works described, which have been carried out in two contracts, by Messrs. Hutchings & Berry, and by Mr. Berry, of Honiton. The plans were originally prepared by the late Mr. Ferrey, F.S.A., and Mr. B. Edmund Ferrey, the work having been superintended by the latter.

## STAINED GLASS IN GERMANY.

The *Gartenlaube* has given prominence to the belief that English stained glass has acquired its present position by the following as nearly as possible of the technicalities of the art as practised by its original founders, thus producing the full colour and peculiar general effect of Mediæval work. The attention of the artistic world has, during the last few years, been given, in a somewhat important degree, to the question of stained glass generally, much information having been brought to light by the researches connected with the celebration, in 1879, at Tegernsee in Bavaria, of the nine-hundredth anniversary of the stained-glass factory at that place, the establishment of which is attributed to Count Arnold of Vohburg, and Gonzbert, Abbot of Tegernsee. From this spot the knowledge of the art is said to have diffused itself throughout Europe, and having penetrated into the regions of domestic architecture, its decadence was caused by a combination of influences reflecting the prejudices of centuries less alive to the beauty of the art than our own age, which has witnessed its revival.

The modern art of staining glass is founded, it is remarked, on its re-discovery at the commencement of the present century. An Englishman who was bargaining for some pieces of old stained glass at a glazier's in Nuremberg, happened to meet there a cabinet varnisher named Siegmund Frank, to whom he casually remarked that any one who could revive the once prosperous art of staining glass could make a fortune out of it. Frank took up the suggestion, and produced a heraldic representation as the first sample of this new development of the art. The Government took up the matter later on, and a suitable place for operations was granted to Frank. In 1845 an institution was opened at Munich, under the direction of Herr Ainmüller, who had been associated with Frank in the earlier period of this revival. The English efforts in this direction have been less an imitation of what has been done in Germany than a close following of the Mediæval work which has come down to the present day. The preference shown for it is exemplified by the fact that English stained glass has gained a footing in such a stronghold of German art as Munich. Considering that Bavaria witnessed the original starting of the stained-glass industry, as well as the re-discovery to which allusion has been made, it is evident that the production of English artists must be of a high order of merit to compete so fully in that country with German work.

A peculiarity of stained-glass manufacture, which forms one of the principal difficulties, is in its connexion with the effect of colours upon each other, and the apparent contraction of the size of objects represented when certain combinations are employed. On this subject some details of interest are given, from which it appears that blue exercises a marked influence upon the surrounding colours, making red appear violet, and white seem of a bluish tint. Dark objects on a light ground are less striking than light ones on a dark ground; and in accordance with this principle, an inscription in black upon white is legible at a distance of 11 yards, while a white inscription upon black can be read at a distance of 16 yards. On the same plan it is stated that a black figure on a yellow ground requires to be one-tenth larger than the same figure in yellow upon a black ground for both to appear the same size. Considerations of a similar nature have obliged artists in stained glass to adopt, in certain cases, proportions for objects in their representations, which although not true to nature, are necessary for producing that harmony of general effect at a short distance which is the most important requirement in artistic work of the class referred to.

## THE "VICTORY OVER SEWER-GAS."

Sir,—I take it for granted that all who are intelligently interested in sanitary matters are agreed:—

1. As to the necessity of cutting off all direct connexions with the main drainage system by means of a good trap between the house and main sewer.

2. Of trapping all wastes, and delivering them over trapped gulleys in the open air.

3. That the Old system or No system of merely trapping the house-drain and carrying the soil-pipe up to the roof is (theoretically, at least) extinct, and needs no further consideration. Here I would state, as a mark of respect to those who have been for years endeavouring to improve our sanitary system, that each of the new plans, or modifications of the same plan, which I am about to criticise, is immeasurably superior to the old plan to which I have referred.* . . . . . .

It has been apparent to me for years that all or nearly all of the efforts that were being made, were in the wrong direction, viz.,—by ventilating up the soil-pipes. (It is both amusing and confusing to read the different opinions expressed at the Conference on May 3rd and 4th, 1877, as to whether the current in a soil-pipe is up or down, some contending that it is always up, others that it is always down. I think Mr. Ernest Turner was nearest the mark when he said that it was sometimes up and sometimes down; and I see that at the same time Gen. Cotton advocated ventilating down soil-pipe and up a separate shaft.) Also, by the retention of traps under the closet. Believing, as I do, that traps of all kinds are at best but necessary (if necessary) evils, I wanted some plan by which I could dispense with all I possibly could of them. I know that on the question of traps doctors differ, but I am content to adopt the description of Professor Corfield in page 108, "Laws of Health," pub. 1880, where he says, "Water-traps are not to be relied on; they moreover form receptacles in which solid matters lodge, and they always necessarily contain foul water; decomposition goes on in them continually, and foul gases are produced, so that they become, in fact, manufactories of foul air." Again, [on page 20 of "Report of Conference," May 4th, 1877, Mr. Rogers Field dwelt upon the fact that sewage-gas passed through the water in ordinary traps imperceptibly, being absorbed on one side of the trapping water and given off on the other, as he had proved to be the case both at Uppingham and elsewhere. On page 65 of the same report he says, "D-traps are small cesspools."

I found by actual experiments again and again with the first and second systems, that although sometimes (when the atmosphere was clear, and a fair amount of wind blowing, especially if it were blowing against the front of the house, against the inlet) we got a very good up-current, even then the current was always checked, and generally reversed whenever the w.c.'s were used, and the better the flush of water, the more complete was the reversal of the current. It was more marked with the open pipe than with the valve inlet. This set me thinking, and I soon saw that there were three forces at work. The air-current, whether induced by cowl or open pipe (query) tending upwards, but always checked by the sewer gas generated in the soil-pipe, which, being heavier, was trying to go down. The fortunes of the struggle varied according to the conditions of the atmosphere; but directly the sewer-gas was reinforced by sewage and water from the w.c.'s, also wanting to go down, the result was an ignoble defeat for fresh air, which found itself driven out at a great rate, by the very way which it was supposed to use only as an entrance. I then set to work to try and yoke these three forces together into one team, by erecting an upcast ventilator of 3 in. wrought-iron barrel (that being the size of my inlet), carrying it up as high as possible, in order to utilise the wind-pressure. This arrangement of itself I found to answer very well, and consider it better than either of the other systems referred to, simply because fresh air and sewer-gas were both being helped along the right road by the greater power of sewage and water from the w.c.'s, and the oftener the w.c.'s were used the more fresh air was drawn down the soil-pipe and through the house-drains, and as there was no force acting against it the current was never reversed. This I found so good, that where poverty makes the cost of heating an objection, or where, in small houses, several parties occupy the same premises, or where there is no gas laid on, I should recommend the adoption of this plan, combined with good valve-closets, with ventilated P-traps, and good syphon or vacuum water-waste preventers, to ensure a good flush of water at each use of w.c.

This measure of success pleased but did not satisfy me, as I wanted not simply a good thing, but the best possible of attainment by me.

In August, 1880, when on a visit to the north, I saw enough of colliery-ventilation to feel convinced I could apply the same principle to aid me in the solution of the drainage problem. It was not till January of the present year that I saw clearly how I could apply it. I set to work and prepared some plans, and in February got my heating-chamber made and fixed to Sir Henry Cole's first house, and the results from the first surprised me. We used a great deal more gas than was necessary, and obtained results far in excess of our requirements. Not only so, but the results were so surprising that the heat alone would not account for them. On further consideration, I account for it by the fact that heat being generated by the consumption of gas within our up-cast, consumes such an amount of oxygen (Professor Corfield states that one gas-burner consumes as much as five men, or more, on page 31, "Laws of Health," 1880; and the *Daily Telegraph* of October 10th, 1881, states in an article on "Stage Lighting," that one gas-burner consumes as much as several men) for its own requirements, which, with its proportion of nitrogen, it has first to draw down the soil-pipe, and through the house-drains as fresh air, thus causing a tremendous current. The heat being generated in this way also provides a ready means for destroying any germs of disease in the sewer-gas, by passing it through the flames in the heating-chamber (it is thus invaluable for application to hospitals, barracks, schools, or large establishments of any kind), and out at the top up-cast above the levels of house-tops, in a state of greater purity than is attainable by any other means. I am now trying the value or reverse of cowls on top of up-cast, and, if I find their use advantageous, shall certainly use them, as I believe we are in duty bound to use all the forces at our disposal.

A word or two in reply to objections. First, to the "supposers." You may suppose anything with respect either to gas, wind, or water. Suppose it is calm, and you get no wind, or a gale, and your cowls are blown away; or suppose there is a very dry season and you get no water, or a very cold season and it is all frozen; or suppose the coal-mines are exhausted, and we can get no more gas, or that we have the gas, but it will not burn through corrosion of the burners or stoppage in the pipes. Well, in all such cases,

* We are obliged to omit our correspondent's criticisms of other plans; they would bring upon us an amount of correspondence to which we could not give space. The subject is a very important one, but some of our readers think they have already had enough of it.

unless you see that your machinery is put in working order again, and kept so, you will fail to produce the desired result. But I contend that, even without any heating-power being applied, the mode I adopt of always ventilating down the soil-pipe and up an upcast between the front of the house and the main drain, with both inlet and outlet above the level of all the windows, and actuated jointly by the water and sewage from the w.c. and the mobility of the atmosphere, is better than any plan that has come under my notice (although in that case I would retain ventilated P-traps, as before stated).

Secondly, as to the cost. It may or may not be enormous. I have tried it for weeks together without applying any heat, and have found it work well. I have used about 1 ft. of gas per hour (costing about 6d. weekly), and found it better. I am now using about 2 ft. per hour, and find it best; the results are so good that I am practically content. I have not attempted to find out the cheapest way to fit up a house with regard to sanitary matters, but the best,—and I at least prove my faith by my works, as I am applying it to all my new houses,—while the extra cost of valve-closets, disconnecting-shaft, and upcast ventilator will be 20*l.* or 25*l.* As, however, there are lots of shoddy merchants already in the market, whose aim is cheapness, I have no intention to endeavour to compete with them. G. E. Mineard.

## POLITICS AND TRADE UNIONS.

Sir,—I entirely dissent from the writer of the letter headed "Politics and the Trade-Unions Congress." * If the trade unions would but look after the vote protected by the ballot, and get the knowledge how to use it, they would do more good than by trusting to the system of striking to get wages up. There is a great deal of fallacy about their getting wages higher. It is true, in some instances, mechanics and labourers get a larger amount of wage in the building trade; but it is neutralised by the advance in house-rent, butcher's meat, shoes, clothing, &c. And that is not all; there is a more rapid way adopted of doing work, and machinery is displacing many *employés* in the building trade; but more of that anon. My object in putting pen to paper is to show an "Old Hand" that the great fault of the working class is that they are not political enough. Why, the coloured people of the United States are better posted up in what concerns the welfare of the country than what many of the English working class are here. I have passed two years in Kansas, in the far West, and I should recommend an "Old Hand" to take a trip to America, and then he would see that there are plenty that are in their "teens that go early to the loom, the forge, and the plough," become Presidents of the United States, like Lincoln and Garfield, or become eminent, like Elihu Burritt, the learned blacksmith; and, more than that, he will see no dilapidated husbandry there. (See the current numbers of the *Daily News*.) We are living in a transitional age. The increase of population and the spread of education are opening the people's eyes, but we are bound and tied by our great-grandfathers' notions.

It is because we are content to let others think for us, that we are divided into Liberals and Conservatives. That nonsense is all played out, and it is time we took a new departure; and if we are hewers of wood and drawers of water, are we to be content while we have plenty of wood to hew and water to draw? No, no, Mr. Old Hand; such counsels are dangerous both to employers and employed. Politics is as necessary to the life of the nation as the air we breathe or the water we drink. It is toleration we want; civil and religious liberty. It is because the English mechanic is not political enough that he is led into the disastrous strikes of late years. Because a few well-meaning men meet together (and I give them credit for good intentions) they forget the surplus outside, and how it is created, and think they can carry all before them. I know what it is. I have had some years' experience, and hope to have more yet. I am no strike-jobber; and let me give a word of advice to the men in the building trades, first to move all places of meeting as far as possible from the public-house, and to remember that a grave responsibility rests on those that wield the striking instrument: too often, like a boomerang, it recoils on the heads of those that use it, as well as on the innocent and inoffensive. At the same time, it is at best a wretched palliative. Like a civil war, it breaks up the happiness of many a home, and after a few years you find yourself in the same position as when you started. W. A. S., Plasterer.

* See p. 433, *ante*.

## GUIDES IN THE BRITISH MUSEUM.

Sir,—Your interesting and instructive articles upon the Egyptian exhibits at the British Museum have been the means of recalling to my mind the still-existing necessity of something in the way of a lucid and comprehensive explanation of our art and archæologic treasures.

Of what use is it to boast of the value and rarity of our collections, if we do not seek to instruct the people so that they may understand and so appreciate them? The majority of the visitors to the British Museum wander about aimlessly, attracted by this and that, with no settled purpose, and in the end understanding nothing. Many a scoff I have heard passed upon a collection of old nails or bronze vessels; while another class simulate admiration for anything and everything they see: the fact of the object being old is to them a sufficient reason for its being so carefully guarded. Each are equally ignorant, and yet the amusement derived from such ignorance by those who do know comes as badly as the foolish observations themselves; for there is actually little or no opportunity for the visitors to gain the information they would gladly avail themselves of if it were procurable. For that the masses do wish to understand is not to be denied, and is proved by the rapidity with which a crowd of interested listeners will congregate around any one who may be explaining or commenting upon the exhibits, and their murmurs of discontent, when dispersed by the officials, in obedience to the rules of the institution, which forbid explanations to be given or crowds to collect.

We shall probably find from the statistics that the number of visitors will have considerably fallen off now the natural history collection has been removed to South Kensington; for it was chiefly in these galleries that the majority seemed to find most enjoyment. Nor is this at all surprising or the reason far to seek. Was it not because they could see there that which they could to a certain extent understand?

What is wanted, and wanted sadly, is a short guide to each room explaining the exhibits and their influence upon art and civilisation, published at a price within the reach of all,—something after the manner of the guides published by the Crystal Palace Company to their various courts,—and if such a series were produced by some competent men under the supervision of Government, it would not only enhance the value of our rare possessions, but lay the foundation of a sound artistic knowledge for the art-student as well as instructing the many of the passing curious. W. C. Haite.

*** We have printed this note as a reason for mentioning what ought to be fully known, but certainly is not, that there are guide-books to all the various rooms obtainable for a few pence; and these will be altered to suit the new arrangement of rooms in due course.

## PROTECTION AGAINST FIRE.

Sir,—Your paragraph in last week's *Builder* concerning the destruction of an ancient house at Bristol, where the loss is estimated in money value at 25,000*l.*, but with your significant addition of the few words, "but in truth no amount of money will represent it," owing to the destruction of the world-renowned premises themselves, together with a very valuable stock of books and MSS., calls for a reminder that cannot be made too widely known. It is simply this,—There are many fire-offices standing A 1 that make an allowance on the insurance premium of 10 to 15 per cent., provided the premises are fitted with suitable fire-extinguishing appliances. I may mention that my insurance rates amount to 280*l.* per annum. I keep a fire-engine on the works, and have hydrants connected to the water companies' main. I have also a few hand-pumps of the London Brigade pattern, and three or four dozen buckets *always full of water*. The value of my fire plant is about 400*l.*, and for this outlay I have an allowance from my premium of 15 per cent., or 42*l.* per year. Surely this is an excellent investment, and mine is only a business of a moderate size. A Manufacturer.

**Architectural Education at University College.**—Pressure of matter compels us to postpone the remainder of Professor Roger Smith's lecture, the first half of which we published last week.

## COMPETITIONS.

*Fever Hospital, Bolton.*—The Sanitary Committee of the Bolton Corporation have selected the plans for the new hospital for infectious diseases, to be erected in Hulton Causeway, Rumworth. The competition was restricted to local architects, and of the eleven sets of designs sent in, the first premium of 25*l.* has been awarded to Mr. Marshall Robinson, of Acresfield, who sent in plans bearing the motto "Desideratum," while the second premium of 15*l.* was awarded to Mr. Thomas Heselden, of Bowker's-row, whose plans were distinguished by the device of the borough arms.

*Proposed Baths and Wash-houses for the Parish of Battersea.*—We understand that the six sets of designs sent in competition for this building in the month of May last have been submitted to Mr. J. Ebenezer Saunders, architect, who will advise the Commissioners as to their relative merits.

## KEEPING DOWN THE WATER.

Sir,—With reference to your correspondent's letter, signed "Greenhorn," in your issue of the 8th inst., I give the following information, which may assist him out of his dilemma:—

Many years ago I had occasion to form an underground tank, 20 ft. by 12 ft., by 9 ft. deep, for the reception of rain-water, and in making the excavation the contractor struck a vein of sand, about the level of the bottom of the tank, from which water rose, and stopped proceedings. I directed a hole to be sunk in the centre, and 2 ft. lower than the bottom of the tank, in which a pump was placed, and by keeping the water down by pumping, the walls were carried up, and the floor of the tank, which was formed of two courses of bricks on flat, in cement, formed, except where the pump stood which, could not be completed owing to the head of water rising in the hole. After thinking over the matter, I had a small well sunk *outside* the tank, 2 ft. deeper than the hole *inside*, and as we struck the same vein of sand and water we placed the pump in it, and by keeping the water down for twenty-four hours, by relays at the pump, we made good the hole *inside* the tank, and gave the cement time to set.

If the subsoil in your correspondent's case is not porous, I would recommend the formation of a small trench drain between the pump-hole inside and the temporary well outside.

Wm. J. Walsh, Surveyor,
Royal Engineer Department.

## CHURCH HEATING *VERSUS* CHURCH VENTILATION.

Sir,—For the sake of the attenders this subject might be ventilated a little, because, as it seems to me, the heat is often got up at the expense of the ventilation, and so the comfort (and sometimes even the health) of the sitters and officials is impaired.

To obviate this, the following plan might be useful, viz., heat up the church the necessary time before the services are to begin, so that the walls and seats, &c., may be warm, keeping the ventilators shut altogether or nearly so. Then so many minutes as necessary before the congregation assemble, open all the outlet ventilators, and also the inlet ones and the doors, for a short time, so as to send out the warm confined air quickly by letting in fresh air. The air coming in so will not have time to cool the walls and furniture, and so, although the fresh air may be cool, heat being radiated from the walls, &c., the sitters will feel comfortable, as the doors will be shut before they enter. The remembrance of some disagreeable experiences last winter induces me at the beginning of this to make the foregoing remarks.

W. P. B.

## STEAM-PROOF CEMENT.

Sir,—Will any of your readers kindly tell me, through the medium of your paper, which is the best cement to use (and if something should be mixed with it) for jointing flags used for making a floor to dry bricks on? The cement I have used allows the steam to work its way through, and so, instead of being perfectly dry, as the flags are, it is wet, and spoils the bricks which happen to lie on the joints. B. H.

**The Steamship "Great Eastern"** was put up for sale in London on Wednesday, the highest offer made being 30,000*l.* Of course the vessel was not sold at this price.

## THE FISH-MARKET QUESTION.

Sir,—Referring to the remarks in your impression of the 8th inst., on my proposal for establishing a fish-market at Bankside, kindly allow me to state that in the report of Sir J. Bazalgette (engineer), and Mr. G. Vulliamy (Superintending Architect to the Metropolitan Board of Works), which has been partly published by the daily papers, these gentlemen state that their instructions appeared to limit their selection of sites to the neighbourhood of the principal railway termini north of the Thames, and after suggesting that the Board should place no restrictions which would interfere with their recommendations, they propose a site on the south side of Blackfriars Bridge, which, as they state, possesses advantages superior to any other that has been proposed.

It is situated between Southwark-street, York-street, and Bear-lane, with frontage on Blackfriars-road; and is proposed as a market for railway-borne fish. At the same time they suggest that should it hereafter be considered desirable to unite the water-borne fish-market with it, the same could be easily done by forming a wharf on the banks of the river, and so running the fish in trucks to the market.

Sir H. Walpole states that a riverside is a *sine quâ non* for a fish-market, and I maintain that it is most desirable to have one market for the sale of both rail and water borne fish, and it is absolutely essential that it should be by the riverside; therefore, you will readily see the site I propose,—situated between Blackfriars and Southwark bridges, possessing river accommodation which even eclipses that offered by Billingsgate Market, having direct communication with the principal railways which bring fish to London, and comprising very inexpensive property, with facilities for further extension if required,—is far preferable to the site in Blackfriars-road, which site it would very shortly be found absolutely necessary to connect with the river, and which would, to a great extent, interfere with the tramway and ordinary traffic of Blackfriars-road, which is ever increasing; respectable people would be upset, and the site would be far more expensive than that proposed by me at Bankside, which comprises property in a most wretched and dilapidated condition, and which, of course, could be acquired very cheaply. It is exactly opposite St. Paul's Cathedral, on the other side of the river, and the establishment of a fish-market there would certainly be an improvement to the metropolis.

H. J. Leeuw.

## EXPERIMENTS ON TRAPS.

Sir,—I trust the importance necessarily attached to all sanitary matters will be a sufficient excuse for my requesting the favour of an insertion of this letter in your paper. Your readers are aware that with a view to making as many improvements as possible in the sanitary arrangements of buildings, there has lately been delivered a series of lectures at the Society of Arts' Rooms. These lectures referred in particular to that which is known in the trade as "trapping"; and if they have had no other good effect, they have at least aroused energies in the trade that will undoubtedly result in enabling architects, sanitary engineers, builders, plumbers, &c., to decide which is the really best system of closet-trap to adopt, with a view to effectually excluding the poisonous gases from the houses. The first result of this agitation is, that a series of experiments has been tried with closet-traps made to the full size. Within the last two months a scaffold has been erected some 50 ft. high, having attached to it a length of soil-pipe 45 ft. high. To this has been connected six branches for fitting any sized trap desired, and each is fitted with closet-basins. This arrangement has enabled the experimentalists to discover the true action of the Ø, "Eclipse," and ▢ traps.

The action of the Ø trap is that on lifting the plug at the bottom of the basin (which had been previously filled with water), the water in the basin, as also that in the trap, rushed forward and left the trap unsealed, consequently leaving passage for any sewer gas that might be generated. This action is commonly called siphonage, but is in reality the momentum of the water itself, which, owing to the slope of the trap, though it clears everything before it, at the same time leaves the trap without water, at once proving that the Ø trap is not a trap at all.

The action of the "Eclipse" trap is the same as that of the Ø.

The ▢ trap, made according to the new method, was also tested, and proved (as I always contended it would) to answer every requirement, *i.e.*, it is perfectly self-cleansing, it does not ebb out, nor does the force of the water, however great, destroy the water seal.

Architects, engineers, and responsible members of the building trade may see the various traps in operation and test them for themselves by applying to Mr. J. Pullen, 73, Penton-place, Kennington Park-road, S.E.

P. J. Davies, A.S.P.

## CHURCH-BUILDING NEWS.

*Sancreed.*—The parish church of Sancreed, Cornwall, which has been restored under the superintendence of Mr. J. D. Sedding, architect, at a cost of 2,150*l.*, was re-opened on the 3rd ult. The restoration fund at present amounts to about 1,750*l.* Before the works were commenced, the church was a pitiable sight, with its defective roofs and walls, and wooden windows.

*Stapenhill.*—The new Church of St. Peter, at Stapenhill, near Burton-on-Trent, has been consecrated. It occupies the site of an older and smaller building. The new church, which is Late Decorated in style, consists of north and south aisles, 60 ft. long by 17 ft. wide; nave, 60 ft. long by 32 ft. wide; chancel, 30 ft. long by 32 ft. wide; and north and south transepts, 24 ft. long by 21 ft. wide. The aisles and nave have separate roofs, the nave being lighted by means of clearstory windows,—eight double lights on the south side and ten on the north. The light for the aisles is obtained by means of three-light windows,—three on the south side and five on the north. The transepts have each handsome traceried double windows, and a corresponding window is also seen at the west end of the church, while a larger one, of exquisite design, provides light for the chancel at the east end. The whole of the windows are filled in with plain cathedral glass. At the west end of the church is the choir gallery, with circular balustrade front, and the old organ has been re-cased, and placed therein. The aisles are divided from the nave by five bays on either side, supported by Bath stone columns. From these bays the roofs spring, and further support is given to the nave roof by the introduction of gilded steps thrown across. Internally, the nave roof is of varnished Memel deal, but the whole of the other woodwork is of varnished pitch-pine. The aisle floors are paved with ordinary quarries, while the chancel is laid with Minton tiles, and wooden blocks are used in the seats. Each seat is furnished with a rug and hassock. These have been supplied by Messrs. Jones & Willis, of Birmingham. The ventilation of the church is stated to be on a new principle, and has been provided for by Messrs. Foster & Pearson, of Beeston. The internal walls are of brick coated with plaster, with Bath stone dressings. Externally the walls are of Derbyshire stone, with dressings of Bath and Ancaster stone, and the upper part of the tower will also be of the latter material. The tower will reach about 100 ft. in height, or 55 ft. above the windows. A pinnacle, 21 ft. above the coping of the battlement, will surmount the tower at each corner, and smaller pinnacles will be placed at the summit of each side. The church, which will be warmed by hot water in pipes fixed along the walls and floors, contains sittings for about 900 persons, many of which will be free. Messrs. Lowe & Sons had the building contract, while the executors of the late Mr. H. Mason have done the woodwork; Messrs. Pickering Bros. the plumbing, glazing, &c.; Mr. Rhodes (Nottingham) supplied the gasfittings; and Mr. Humphreys (Nottingham) fixed the hot-water apparatus. Mr. Corser acted as clerk of works at first, and he was succeeded by Mr. Dent. The work has been carried out under the superintendence of the architects, Messrs. Evans & Kelly, of Nottingham. The total cost is about 10,500*l.*

*Lower Tranmere.*—The new church of St. Luke, Lower Tranmere, was consecrated on the 18th inst. by Bishop Kelly, late of Newfoundland, acting for the Bishop of Chester. The building was commenced last year, and takes the place of a temporary church erected in 1874. It consists of nave and chancel (the same height), and side aisles, with somewhat lofty clearstory. It is designed in the late Gothic or Perpendicular style, simply treated. Advantage has been taken of the great fall of the land by placing the vestries underneath the east end, the choir vestry being large enough to seat over 100 persons. The church will accommodate 720 persons. There are four entrances, that at the south-west corner having a commodious porch. The organ is placed at the east end of the north aisle. At the west end of the nave is erected a substantial half-timbered bell-cote. The whole of the exterior is of local stone, and a portion of the interior is faced with Runcorn stone. The benches are of pitch pine, also the altar-rail and table, the pulpit and font being of stone. The builder's work has been carried out by Mr. A. Bleakley, of Birkenhead; the heating by hot-water by Messrs. Hinson; and the lighting by Mr. Hamilton, also of Birkenhead. The whole has been designed and carried out under the superintendence of Mr. G. E. Grayson, architect, Liverpool. The total cost of the building will be about 5,500*l.*

## Miscellanea.

**Manchester Architectural Association.**—The annual *conversazione* of this Association was held on Wednesday evening in the Memorial Hall, Albert-square. The society at present numbers about seventy members. The proceedings included an address by the president, Mr. J. Murgatroyd, and an exhibition of models, drawings, sketches, and other works of art contributed by members and friends of the Association.

**New Schools** are about to be erected in the Bearwood-road, Smethwick, from the designs of Messrs. J. F. Sharp & Co., Birmingham, architects to the Harborne School Board.

**The Turners' Company.**—This company have again awarded prizes for works submitted. In wood there were twenty-six exhibits, including vases, candlesticks, inkstands, columns, oval frames, plates, waiters, table legs and columns, cigar-holders, paper-racks, ring-stands, and other articles. The judges (Mr. A. P. Bower, Mr. S. Jacques, Mr. J. Jones, and Mr. Winser) certified improvement in these examples over those shown at former exhibitions. They awarded the first prize to Mr. J. S. Coulson, of Kirkgate, Thirsk, for four vases and card-dishes; the second prize to Mr. Nickolay, of 43, Rupert-street; and the third prize to Mr. J. M'Donald, of 4, Chapel-house-street, Millwall. The same judges also spoke in high praise of the work of the students in the Middle-class School in Cowper-street, Finsbury. They awarded the prize to W. V. Weldon. In the amateur class they gave the prize to Mr. H. Balsham, of Altrincham. In pottery, the judges were Mr. George Wallis, F.S.A., of South Kensington Museum; Mr. Horace Jones, the City Architect; Mr. C. T. Newton, C.B., of the British Museum; and Mr. J. J. Holtzapffel. The first prize was awarded to Mr. Alfred Dupuis, of 129, Princes-road, Lambeth, for some beautiful vases and pillars; the second to Mr. Thomas Ellis, of 69, Vauxhall-road; and the third to Mr. William Bolton, of 57, Dashwood-road, Battersea. In the metal classes the judges were Sir Henry Bessemer, F.R.S., Mr. C. Hutton-Gregory, C.M.G., Colonel Haywood (engineer to the Corporation), and Mr. R. Price Williams. The first award was made to Mr. A. E. Nelson, of 31, Halton-street, Canonbury, for some hard-flatting rolls. The second prize was given to Mr. H. A. Alexander, of 166, Camberwell-road, for a ball-and-socket joint; and the third to Mr. C. J. Barber, of 74, Cleveland-street, Fitzroy-square, for a Grecian vase. The Lord Mayor has since presented the prizes.

**"Owen Jones" Prizes, 1881.**—This competition was instituted in 1878 by the Council of the Society of Arts, as trustees of the sum of 400*l.*, presented to them by the Owen Jones Memorial Committee, being the balance of the subscriptions to that fund, upon trust to expend the interest thereof in prizes to "Students of the Schools of Art who, in annual competition, produce the best designs for household furniture, carpets, wall-papers and hangings, damask, chintzes, &c., regulated by the principles laid down by Owen Jones." The prizes are awarded on the results of the annual competition of the Science and Art Department. Six prizes were offered for competition in the present year, each prize consisting of a bound copy of Owen Jones's "Principles of Design," and a Bronze Medal. The following is a list of the successful candidates:—

1. Gideon Fidler, School of Art, Salisbury.—Design for carpet.
2. John Lamb, School of Art, Kidderminster.—Design for carpet.
3. Thomas Dutton, School of Art, Nottingham.—Design for lace.
4. Rose Phillips, School of Art, Northampton.—Design for wall paper.
5. Robert Harris, School of Art, Salisbury.—Design for chintz.
6. W. J. Clulow, School of Art, Macclesfield.

**Dealing with Dangerous Structures.**—At the meeting of the Metropolitan Board of Works, last week, the Finance Committee presented a report, stating that it appears desirable that further Parliamentary power should be obtained by the Board in connexion with the recovery of the expenses of dangerous structures, and recommending that the subject be referred to a committee for consideration, with a view to obtain an amendment of the law by a clause in a Various Powers Bill, or as soon as a fitting opportunity presents itself. This recommendation was agreed to.

**The Gale of Friday, the 14th inst.**—The daily papers have informed readers of the very great damage done all over the country by the storm of Friday in last week. Many lives were lost, and several marvellous escapes are recorded. Buildings were unroofed and strong walls blown down. These facts ought to receive the careful attention of all who are engaged in construction. In connexion with this subject, we note that a communication has been addressed to the principal fire-offices suggesting the expediency of establishing a distinct branch of business for insuring houses against damage by wind.

**New Dock at Swansea.**—Their Royal Highnesses the Prince and Princess of Wales were present on Tuesday at the opening of a new dock at Swansea. The dock, which has been constructed at a cost of nearly 200,000*l.*, was christened the Prince of Wales Dock.

**The Wind and the Thames.**—*Apropos* of the storm of Friday, the 14th of October of this present year, when for several hours the waters of the Thames were so low that the bed of the river was in many places exposed, and the stream so far withdrawn from the bank on either side that an opportunity was afforded for picking up several curiosities, several of considerable interest and value, it may be interesting to give the following extracts not made use of in any history of Old London:—"March 2nd, 1761.—The flow of the tide was so little that the starlings [the wooden piles driven in outside the foundations of the piers] were not covered at high water,—a thing not known in the memory of man." "July 4th, 1768.—The water of the river Thames was so much driven [by the wind] out of its usual channel above bridge, as is not remembered by the oldest man living; one-half of the bed of the river remaining uncovered with water during two tides." "August 11th, 1772.—The water of the Thames was so remarkably low in the afternoon, that people might have waded across from Pepper-alley-stairs to the opposite side without danger of drowning." A storm of wind was raging at the time. Pepper-alley-stairs will now be sought for in vain. They were above bridge, near Paul's Chain, facing Pepper-alley, on the Borough side.

**The Board Room in Spring Gardens.**—At the meeting of the Metropolitan Board of Works on the 14th inst., it was resolved, on the motion of Mr. Selway, to refer the question of the warming and ventilation of the Board-room to the Building Act Committee. There is good reason for such a reference, the room, although a large one, being generally very close and "stuffy." If any structural or internal alterations are made in the apartment, the esteemed Superintending Architect of the Board will earn the gratitude of the reporters by bringing forward the front of their gallery by at least a foot. Any reporter who wishes to pass to or from a seat at the end of the gallery remotest from the door cannot do so without disturbing the whole of the fifteen or sixteen other occupants. The gallery is just wide enough for its long row of chairs, but the provision of adequate gangway-room behind the chairs seems to have been forgotten.

**Leggott's Patent Window Lift and Fastener.**—In this arrangement the window is wound up, or down, by simply turning a handle, which acts on a short endless screw, and in the model we have seen it certainly seems to act very satisfactorily. The apparatus provides an easy and inexpensive method (always at command and under ready control) for ventilating any apartment by the opening of a window, either at top or bottom, or both, by one operation. It affords at the same time security against thieves, as the sashes, whether closed or opened, are perfectly locked. It dispenses with all sash-cords, sash-weights, sash-fasteners, and the consequent annoyance and expense of repairs which always attend the antiquated system of window-hanging hitherto retained. We understand that two of the lifts have been made by order of Mr. John Whichcord, architect, for the new Houses of Parliament, Cape Town.

**Alexandra Palace Industrial Exhibition.**—The young men of Holloway and neighbourhood are well represented by the exhibits of F. J. Bancroft (a junior in the Highways Department of the Islington Vestry), who, under the head of "Studies in Building Construction," shows a collection of upwards of sixty specimens of woods, as used in carpenter's, joiner's, and cabinet-maker's work, as well as a very fair show of architectural drawings, and specimens of wrought-iron bars twisted and bent in various ways, to show the quality of the metal; also a collection of specimens of granite used in paving roads.

**City and Guilds of London Institute.**—This Institute for the Advancement of Technical Education has just now issued its Programme of Technological Examinations for 1881-82 (Gresham College, London). It gives a syllabus of subjects of examination, and includes copies of the papers set in the last examination for 1881.

**Builders' Benevolent Institution.**—An old friend of this important institution, desiring to aid its current funds, has offered to contribute one hundred guineas if twenty other gentlemen will give ten guineas each. A letter on the subject from Mr. Geo. Burt, the President, will be found in our advertising columns.

**The Manchester Infirmary.**—The Earl of Derby took the chair at a meeting held in the Manchester Town-hall, on Tuesday, in aid of the funds of the Manchester Infirmary, of which institution he is the President. He explained the financial position of the infirmary as follows. It had been found necessary since 1877 to make alterations and improvements in the hospital costing 23,000*l.*, while the hospitals at Cheadle and at Monsall had cost 11,000*l.* more. It was absolutely necessary to put up a building for the use of the nursing staff, and that would involve an additional outlay of 5,000*l.* It is calculated that the cost at which the infirmary could be maintained on its present footing was 27,000*l.* to 28,000*l.* yearly. Unluckily, Lord Derby said, in all cases, more especially in the case of hospitals, and above all in hospitals situated in large towns, nothing was more costly than effective sanitary work. The very first condition of sanitary improvement was fresh air and plenty of it, and fresh air in hospitals meant increased space, and increased space meant a larger outlay in building, and not only that, but a larger outlay to keep up the buildings.

**Communication with Lighthouses and Lightships.**—A meeting was held at the Mansion House on Tuesday, convened by the Lord Mayor on a requisition signed by 1,200 citizens, for the purpose of representing to her Majesty's Government the urgent necessity of establishing telegraphic communication between lighthouses and lightships and the shore, so as to prevent great loss of life round the coast in vessels shipwrecked or in distress. The Lord Mayor, who presided, observed that most of the vessels in distress and the wrecks happened to be at least ten or twelve miles distant from the mainland; that rockets and guns were now the only available means of communication; and that these entirely failed in fogs, snowstorms, and often atmospheric disturbances. He could hardly imagine any more desirable end to attain than the placing of the lighthouses and the surrounding lightships in instant communication with the shore, by which means a vast amount of property and great numbers of lives might be saved. The lighthouses were admirably managed by the Trinity House, and the lifeboats on shore were ever ready for duty, but lives were lost and goods sacrificed by the absence of communication, and the loss of time that now elapsed in observing the signals of distress. Resolutions urging the Government to carry into effect the desired communication were adopted.

**Topographical Society of London.**—We understand that Wyngaerde's large view of London, which has been lent on bond to the Society by the Trustees of the Bodleian Library, is now being copied by the Typographic Etching Company's photo-intaglio process. It is hoped sheets of a considerable portion of the view may be delivered to the members with but little further delay. The extracts from the calendars of State papers, &c., are being collected, as announced in the prospectus, and it is expected that the first report of the Society will contain several illustrations of houses of interest which have lately been pulled down.

**Exhibition of Paintings on China, Birmingham.**—The third annual exhibition of paintings on china was opened on Tuesday at Mr. R. W. Thrupp's Fine Art Gallery in New-street. The majority of the exhibitors are ladies. The exhibition is a thoroughly representative one, for whilst Birmingham figures well with 120 exhibitors out of 467, the others include works of artists from all parts of the country. In consequence of the increase on the number of exhibitors,—from 252 to 467,—it has been necessary to limit each to three exhibits.

**Norwood.**—A new Baptist chapel is being erected in Gipsy-road, Norwood. A contract has been entered into with Messrs. J. Smith & Sons, builders, of South Norwood, to build the new chapel at the cost of 3,936*l.*, from the designs of Mr. Hampden W. Pratt, of Furnival's-inn, who was the successful architect in the competition which took place in May of this year. The building is intended to seat between 700 and 800 persons.

**The Church at Carlton-in-Cleveland,** near Stokesby, was entirely destroyed by fire on Wednesday morning. The church was only rebuilt about three years ago, at a cost of 2,000*l.* The whole of the parish registers were consumed. It is supposed that the fire was the work of an incendiary.

## TENDERS

For proposed new Parsonage House, at St. Peter's, London Docks, for the Rev. R. A. J. Suckling. Mr. Bowes A. Paice, architect. Quantities by Mr. C. Poland:—

*For Foundations and pulling down old buildings.*

| | |
|---|---|
| Dawson | £1,490 0 0 |
| Laing & Son | 1,407 0 0 |
| Higgs & Hill | 1,140 0 0 |
| Colls | 1,075 0 0 |
| Dove Bros. | 990 0 0 |
| Brown | 945 0 0 |
| Cooper | 878 0 0 |
| Manley | 790 0 0 |
| Palmer & Son | 725 0 0 |

*For Superstructure.*

| | |
|---|---|
| Dawson | £5,900 0 0 |
| Colls | 5,873 0 0 |
| Laing & Son | 5,229 0 0 |
| Higgs & Hill | 5,180 0 0 |
| Dove Bros. | 4,925 0 0 |
| Brown | 4,900 0 0 |
| Palmer & Son | 4,675 0 0 |
| Cooper | 4,644 0 0 |
| Manley | 4,447 0 0 |

For alterations and repairs to Nos. 14 and 15, Dorset-street, for Mr. W. T. Botting. Mr. Haynes, architect:—

| | |
|---|---|
| J. Vear & Co. (accepted) | £395 0 0 |

For alterations in rear of premises, No. 122, High-street Borough, S.E., for Mr. T. D. Hill. Mr. T. W. Barry architect:—

| | |
|---|---|
| Thos. Shuff | £480 0 0 |
| Hearle & Sons | 435 0 0 |
| Jarvis & Sons | 413 0 0 |
| W. B. Downs | 395 0 0 |
| H. Bodien | 377 0 0 |
| *W. B. Downs | 365 0 0 |
| *Thos. Shuff (accepted) | 350 0 0 |
| *H. Bodein | 327 0 0 |

* Revised estimates.

For alterations at the Grapes Public-house, Seven Dials, for Mr. W. Wright. Mr. T. W. Barry, architect:—

| | |
|---|---|
| C. Everard | £960 0 0 |
| W. Pringle | 880 0 0 |
| T. Shuff (accepted) | 745 0 0 |

For alterations and additions to Mr. Harrod's Stores, Brompton-road. Mr. Alfred Williams, architect:—

| | |
|---|---|
| Larter & Son | £1,189 0 0 |
| Martin, Wells, & Co. | 1,182 0 0 |
| Langmead & Way | 1,126 0 0 |
| Benstead & Sons | 994 0 0 |
| Sprake & Foreman | 989 0 0 |
| Patman & Fotheringham | 943 0 0 |
| Stimpson & Co. | 939 0 0 |

For erecting twelve houses in the Haringay-road, Green-lanes, N., for Mr. J. T. Pickburn. Mr. Smithers, architect:—

| | |
|---|---|
| Harper | £4,906 0 0 |
| Pawson | 4,200 0 0 |
| Henderson | 4,200 0 0 |

For completing certain works at No. 61, Russell-square. Mr. Wm. Paice, architect:—

W. B. Downs & Co. (accepted).

For the erection of studio at Kensington. Mr. Wm. Paice, architect:—

Bodien (accepted).

For new roads and sewers for the London Land Company, on their Estate at Chingford Station, Essex:—

| | |
|---|---|
| Philbey, Romford | £1,100 19 0 |
| Dunmore, Hornsey | 833 0 0 |
| Bloomfield, Tottenham | 800 0 0 |
| Harris, Camberwell | 793 0 0 |
| McKenzie, City | 782 0 0 |
| Kebble, Regent's Park | 765 0 0 |
| Pizzey, Hornsey | 759 0 0 |
| Killingback, Camden Town | 755 0 0 |
| Jackson, Leyton | 744 0 0 |
| Peill, Bromley | 739 0 0 |
| Wilson, Walthamstow (accepted) | 697 0 0 |

For erecting new stables, &c., at Holly Park, Crouch Hill, for Mr. Marner. Mr. J. Hamilton, architect:—

| | |
|---|---|
| Goodman | £280 0 0 |
| Merton | 257 0 0 |
| Harper | 254 0 0 |
| Shurmur | 243 0 0 |

For making new roads, kerbing, &c., at Wallington. Mr. J. Hill, surveyor:—

| | |
|---|---|
| Hall (accepted) | £5,840 0 0 |

For alterations and additions to the National Schools Wolston. Mr. Herbert W. Chattaway, architect:—

| | |
|---|---|
| G. Frith, Coventry | £170 0 0 |
| J. Bushill, Wolston | 169 0 0 |
| J. Fitter, Wolston | 140 0 0 |
| J. Waywood, jun., Coventry | 140 0 0 |
| J. Worwood, Coventry | 138 0 0 |
| W. B. Heap, Dunchurch (accepted) | 115 0 0 |

For proposed cottage residence, Hadley-road, New Barnet, for Mr. J. Woolley. Mr. Joseph White, architect:—

| | |
|---|---|
| Gould & Brand | £587 0 0 |
| Butcher | 503 15 0 |
| Pocock (accepted) | 500 0 0 |
| Noble (withdrawn). | |

For filling in brick pits on the estate of the Right Hon. the Earl of Yarborough, New Clee, Great Grimsby. Messrs. Maughan & Cuxson, surveyors:—

Charles Simons (accepted).

For paving footways to new roads on the estate of the Earl of Yarborough, Great Grimsby. Messrs. Maughan & Cuxson, surveyors:—

James Brown (accepted).

For alterations, additions, and repairs to 54, Colebrooke-row, Islington, for Mr. Leopold Jacobs. Mr. W. P. Griffith, architect. Quantities not supplied:—

| | | | |
|---|---|---|---|
| Bamford | £547 | 10 | 0 |
| Ebbage | 535 | 0 | 0 |
| Lidstone (accepted) | 525 | 0 | 0 |

For additions to 52, Mildmay-park, Stoke Newington, for Mr. T. Rowlands. Mr. W. P. Griffith, architect:—

Fricker (accepted).

For the construction of new sewers in John-street, Little James-street, and St. John-street, within the Holborn District. Mr. Lewis H. Isaacs, surveyor:—

| | | | |
|---|---|---|---|
| Wilkes & Co. | £1,794 | 0 | 0 |
| Crockett | 1,586 | 0 | 0 |
| Marshall | 1,577 | 0 | 0 |
| John Mowlem & Co. | 1,450 | 0 | 0 |
| Ford & Everett | 1,422 | 0 | 0 |
| Neave & Son | 1,394 | 0 | 0 |
| Killingback (accepted) | 1,350 | 0 | 0 |

For alterations and additions to the Royal Oak, North Woolwich, for Mr. James Palmer. Mr. Edward Brown, architect:—

| | | | |
|---|---|---|---|
| Hawkings | £510 | 0 | 0 |
| R. Marr | 494 | 0 | 0 |
| S. Salt | 395 | 0 | 0 |
| S. & J. Brightmore | 315 | 0 | 0 |

For alterations and additions at No. 148, Hoxton-street, for Mr. R. Hillier. Mr. Edward Brown, architect:—

| | | | |
|---|---|---|---|
| R. Marr | £419 | 0 | 0 |
| G. Skipper | 389 | 0 | 0 |
| S. Salt | 360 | 0 | 0 |

For the erection of a pair of villa residences in Glengall-road, Woodford, for Messrs. C. Bolton & J. Channon. Mr. E. C. Allam, architect:—

| | | | |
|---|---|---|---|
| North, Bros. | £1,450 | 0 | 0 |
| H. Wells | 1,379 | 0 | 0 |
| A. Philbey (accepted) | 1,320 | 0 | 0 |

For the erection of a villa residence on Norbiton Park Estate, New Malden, Surrey, for Mr. F. Sledge. Mr. T. L. Heward, architect. Quantities supplied:—

| | | | |
|---|---|---|---|
| Geo. Worman | £819 | 0 | 0 |
| Hy. Thorn | 749 | 0 | 0 |
| Jos. Saunders (accepted) | 747 | 0 | 0 |

For bridge over Beverley Brook, on Blagdon Estate, New Malden, Surrey, for Messrs. Guscotte, Wadam, & Daw. Mr. T. L. Heward, architect:—

| | | | |
|---|---|---|---|
| Pollard (accepted) | £167 | 0 | 0 |

For stable and coach-house, at Ripley Villa, New Malden, Surrey, for Mr. F. S. Merryweather. Mr. T. L. Heward, architect. Quantities supplied:—

| | | | |
|---|---|---|---|
| John Earle | £120 | 0 | 0 |
| Geo. Worman | 117 | 0 | 0 |
| Jos. Saunders (accepted) | 91 | 0 | 0 |

For pulling down Old Red Lion, Hammersmith Mall, and erecting house and shop and four-roomed cottage on site, for Messrs. Fuller, Smith, & Turner. Mr. Wm. Nunn, architect:—

| | | | |
|---|---|---|---|
| Hunt | £1,180 | 0 | 0 |
| Lamble | 1,165 | 0 | 0 |
| Iles | 1,159 | 0 | 0 |
| Wescombe | 1,142 | 0 | 0 |
| Mansell | 1,130 | 0 | 0 |
| Chamberlain | 1,119 | 0 | 0 |
| Nye | 1,045 | 0 | 0 |

For repairs, &c., to Woodstock, Sutton. Mr. W. Newton Dunn, architect:—

| | | | |
|---|---|---|---|
| Bowyer & Son, Norwood | £1,320 | 0 | 0 |
| Phillips & Son, Baker-street | 943 | 0 | 0 |
| Peacock, Bros., Brixton | 923 | 0 | 0 |
| J. Smith & Son, Norwood | 879 | 10 | 0 |
| Kiddle & Sons, Norton Folgate, E.C. | 850 | 10 | 0 |
| Maxwell Bros., Brixton | 849 | 0 | 0 |
| Homann & Sons, Stanhope-street | 845 | 0 | 0 |
| Kerry, Highgate | 817 | 19 | 4 |

For the completion of five residences at South Kensington. Mr. Thomas, architect:—

| | | | |
|---|---|---|---|
| Oldrey | £6,488 | 0 | 0 |
| Manley | 5,412 | 0 | 0 |
| Barter & Bickley | 5,334 | 0 | 0 |
| Toten & Sons | 5,200 | 0 | 0 |
| McManus (withdrawn). | | | |

For roads and sewers at Wimbledon for the Land Development Association, Limited:—

| | | | |
|---|---|---|---|
| William White, Dartford | £1,334 | 13 | 10 |
| W. J. Botterill, Cannon-street | 1,270 | 0 | 0 |
| W. Stubbs, Lambeth | 1,124 | 0 | 0 |
| J. Poole, Wimbledon | 1,100 | 0 | 0 |
| M. W. Rowles, Acton | 1,085 | 0 | 0 |
| E. & W. Iles, Wimbledon | 1,020 | 0 | 0 |
| George Impey, Leytonstone | 1,012 | 0 | 0 |
| George Butler, Camberwell | 1,000 | 0 | 0 |
| Joseph Jackson, Upton | 997 | 17 | 6 |
| A. Oliver, Brighton | 995 | 0 | 0 |
| Wilkes & Co., Westbourne-park | 992 | 15 | 0 |
| S. Alldred, jun., West Kensington | 979 | 0 | 0 |
| James Pizzey, Hornsey | 970 | 0 | 0 |
| W. Harris, Camberwell | 947 | 0 | 0 |
| Ford & Everett, Westminster | 895 | 0 | 0 |
| A. T. Catley, Pentonville (accepted) | 871 | 0 | 0 |
| F. Warr, Croydon | 678 | 13 | 0 |

For alterations and additions to Edinburgh-road Board Schools, for the London School Board. Mr. E. R. Robson, architect:—

| | | | |
|---|---|---|---|
| Tongue | £3,218 | 0 | 0 |
| Rankin | 3,149 | 0 | 0 |
| Higgs & Hill | 3,090 | 0 | 0 |
| Wall Bros. | 3,090 | 0 | 0 |
| Oldrey | 2,937 | 0 | 0 |
| Scrivener & Co. | 2,905 | 0 | 0 |
| Grover | 2,888 | 0 | 0 |
| Shepherd | 2,808 | 0 | 0 |
| Stimpson & Co. | 2,773 | 0 | 0 |

For two houses in Harrington-road, for Mr. W. Cassels. Messrs. Ernest George & Peto, architects. Quantities supplied by Messrs. Stoner & Sons:—

| | | | |
|---|---|---|---|
| Simpson & Son | £15,540 | 0 | 0 |
| Williams & Son | 15,125 | 0 | 0 |
| Colls & Son | 14,458 | 0 | 0 |
| Brass | 14,371 | 0 | 0 |
| Ashby Bros. | 14,147 | 0 | 0 |
| McLachlan | 13,940 | 0 | 0 |
| Mark Manley | 13,050 | 0 | 0 |
| Stephens & Bastow, Bristol | 12,768 | 0 | 0 |

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